SOME COMMON PLANTS OF THE SUB-BOREAL SPRUCE ZONE

Land Management
HANDBOOK NUMBER 6

MARCH 1962

K
FA
C
L23:6
1962
c.3

Some Common Plants of the Sub-Boreal Spruce Zone

LEGISLATIVE LIBRARY
VICTORIA, B.C.

Canadian Cataloguing in Publication Data
Pojar, Jim, 1948-

Some common plants of the sub-boreal spruce zone

(Land management handbook, ISSN 0229-1622 ; no. 6)

Includes index.
Bibliography: p.
ISBN 0-7719-8904-0

1. Botany - British Columbia. 2. Plants - Identification. I. British Columbia. Ministry of Forests. Forestry Division. Research Branch. II. Title. III. Series.

QK203.B7P64 581.9711 C82-092109-2

Published by the
Information Services Branch
B.C. Ministry of Forests
1450 Government Street
Victoria, B.C.
V8W 3E7

© 1982 Province of British Columbia

Ministry of Forests Publication No. H28-81073

SOME COMMON PLANTS OF THE SUB-BOREAL SPRUCE ZONE

J. Pojar
R. Love
D. Meidinger
R. Scagel

Province of British Columbia
Ministry of Forests
Research Branch

Abstract

This guide contains photographs or drawings of 129 of the most common and characteristic native plants (excluding trees) of the Sub-Boreal Spruce Biogeoclimatic Zone of British Columbia. Habitat information in the form of an edatopic grid accompanies each of these species. Nineteen groups of silhouettes composed of 95 plants are included. Forty-five of the species in the silhouette groupings are additional to those pictured in photographs or drawings. A checklist of the known flora of the zone, along with an index of common and scientific names for the species illustrated are provided. The guide is intended primarily for foresters, forest technicians and range managers.

Table of Contents

Authors and Illustrators iv
Acknowledgements iv
Introduction 1
Sub-Boreal Spruce Zone 3
Format 4
Illustrations of Species
Photographs and Drawings 7
- Shrubs 7
- Dwarf Woody Plants 16
- Forbs, Ferns, and Fern Allies 19
- Sedges and Grasses 36
- Lichens 55
- Liverworts and Mosses 58

Silhouette Groupings
- Shrubs 65
- Dwarf Woody Plants 73
- Forbs, Ferns, and Fern Allies 74
- Lichens 84
- Mosses 85

Checklist of Species 87
Selected References 97
Index of Scientific and
Common Names 99

Table of Figures

Map of the Sub-Boreal Spruce Zone 2
Edatopic Grid 5
Relative floret sizes 54

Authors and Illustrators

Jim Pojar works as a forest ecologist for the Research Branch of the British Columbia Ministry of Forests. For the past four years he has been developing an ecosystem classification of the Prince Rupert Forest Region of northwestern B.C., and is based with the Research Section in Smithers.

Robin Love was employed by the Research Branch of the British Columbia Ministry of Forests in Prince George as a forest ecologist. For three years he assisted with the development of an ecosystem classification of the Prince George Forest Region.

Del Meidinger is a forest ecologist with the Research Branch of the British Columbia Ministry of Forests located in Prince George. He has been developing an ecosystem classification of the Prince George Forest Region of northeastern B.C. during the past three years.

Rob Scagel is contracted to the British Columbia Ministry of Forests Research Branch to develop indicator species guides.

Frank Boas is a free lance photographer and bryologist contracted to the British Columbia Ministry of Forests.

Peggy Frank is an artist contracted to the Research Branch of the British Columbia Ministry of Forests. She specializes in pen and ink drawings and silhouettes of plants.

Bob Norton is a free lance photographer specializing in the internal structure of flowers. He is currently a Ph.D. student at the University of British Columbia.

Acknowledgements

We thank Blake Dickens and Martin Ross for their photographs. (Blake Dickens: ***Amelanchier alnifolia*** p.7 ***Chimaphila umbellata*** p.16. and ***Matteucia struthiopteris*** p.29 Martin Ross: ***Kalmia microphylla*** p.9 and ***Cornus canadensis*** p.23.) We also thank June Mohr for her help typing and for assistance with the index. For their help in the production of this book we thank Karen McKeown and Peggy Frank.

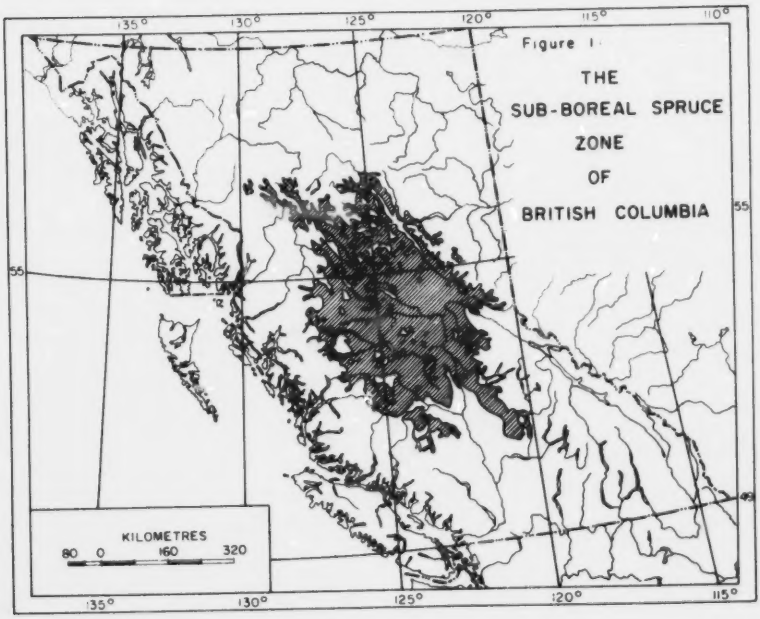
Introduction

This guide includes 174 of the more common and characteristic plants of the Sub-Boreal Spruce Biogeoclimatic Zone (SBS) of British Columbia. It is intended to accompany the British Columbia Ministry of Forests classification of the terrestrial ecosystems of the SBS, which is still under development. We have therefore designed a concise and simple visual guide to the plants that are most useful in understanding and applying the classification of the SBS zone. The booklet is intended primarily for foresters, forest technicians, range managers and others with similar interests and responsibilities.

Most of the species illustrated are forest plants. Some are characteristic of grasslands or wetlands. All are native species. Trees have not been included, as several adequate guides to the trees are available (Hosie 1969; Garman 1973; Lyons 1974; British Columbia Forest Service 1977)[1]. Additional and more technical information is available in several other excellent manuals including Hitchcock *et al.* (1955-69), Hultén (1968), Hitchcock and Cronquist (1973), Moss (1974), Welsh (1974) and Scoggan (1978-1979). Scoggan is the only one of these manuals that includes the entire flora of the SBS; however, it has no illustrations.

[1] Authors and dates in parentheses refer to Selected References, page 97

Figure 1 : Sub-Boreal Spruce Zone



The Sub-Boreal Spruce Biogeoclimatic Zone (SBS) falls mainly between 52° and 57° North latitude, and 122° and 128° West longitude, in the central interior of British Columbia (Fig. 1). Rowe (1972) classified this area as part of his Subalpine and Montane Forest Regions. We have followed Krajina's (1965) concept of the SBS as the southernmost (in B.C.) zone of the Canadian Boreal Forest Region. However, we have expanded his original concept and extended the zonal boundary southward. We consider the forests of the SBS as broadly transitional between the true montane forests of Douglas-fir to the south, boreal forests to the north, and subalpine forests at higher elevations.

The SBS occurs at low and medium elevations (500-1300 m) over much of the central interior plateau system (i.e., the Fraser and Nechako plateaux and the Fraser Basin) of B.C. Low relief predominates, with great expanses of fairly flat or gently rolling terrain variously dissected. The zone fingers into more mountainous areas along its eastern, western and northern boundaries.

Upland coniferous forests dominate the sub-boreal landscape. *Picea engelmanni* x *P. glauca* (hybrid spruce), *Picea glauca* (white spruce) and *Abies lasiocarpa* (subalpine fir) are the dominant climatic climax tree species. *Pinus contorta* (lodgepole pine) appears to be a fire-climax species over much of the upper Chilcotin district, in the dry southwestern portion of the SBS. *Picea mariana* (black spruce) also occurs occasionally in climax upland forest.

Lodgepole pine and *Populus tremuloides* (trembling aspen) pioneer the extensive seral stands. *Betula papyrifera* (paper birch) is often a pioneer tree on moister, richer sites. *Pseudotsuga menziesii* (Douglas-fir) is usually a long-lived seral species in the SBS and reaches its northern limit in the zone. Douglas-fir is widespread in the Fraser-Nechako drainage, occurring on dry, rich sites and as a consistent, although small, component of many mesic forests, especially in the southeastern part of the zone.

Alluvial forests of *Populus balsamifera* subsp. *trichocarpa* (black cottonwood), often with a minor component of spruce, occur to a limited extent on active floodplains of the major streams and rivers.

Wetlands are common and dot the landscape in poorly drained postglacial depressions or river oxbows. Wetland community types include *Carex* (sedge) marshes, shrub fens of *Betula glandulosa* (scrub birch) and *Salix* spp. (willows), treed fens and swamps with black and hybrid spruce, and black spruce — *Sphagnum* bogs. Acidic, nutrient-poor bogs are less common than the richer wetland types (marshes, fens, and swamps). *Larix laricina* (tamarack) is a rare species in the SBS and occurs in only a few fens and swamps of the Nechako and Chilako drainages.

Natural grassland and scrub-steppe are uncommon in the SBS, occurring on some warm, dry sites scattered in the major valleys.

The guide illustrates what we think are the most useful plants (other than trees) to know in the Sub-Boreal Spruce Zone. Most of the illustrations are photographs. Line drawings are provided for those plants that were not suitably photographed. We have also included silhouettes of groups of species that are often difficult to distinguish from each other, particularly when they are not in flower. The intended method of identification is direct comparison between unknown plants and the illustrations. Therefore we have omitted keys and other descriptive text. The guide does not illustrate all species that occur in the SBS, so plants will be found that do not match any of the illustrations.

For each photograph or drawing we have included: (1) scientific and common names; and, (2) habitat information in the form of a rough plot of the species' distribution on an edatopic grid.Small silhouettes show the overall form of some shrubs. Species in the silhouette groupings are accompanied only by their scientific and common names.

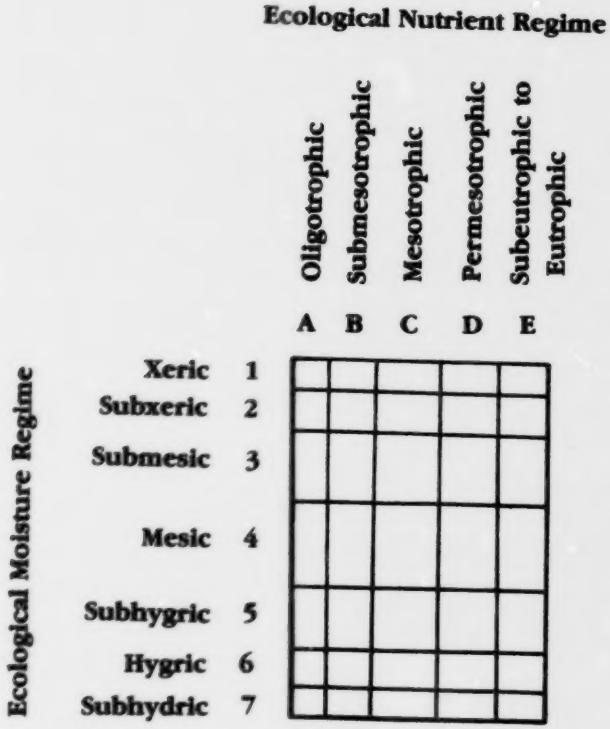
For vascular plants we have used the scientific names in the standard reference for British Columbia (Taylor and MacBryde [1977]). Lichen nomenclature follows Hale and Culberson (1970); liverworts follow Stotler and Crandall-Stotler (1977); mosses follow Crum *et al.* (1973). We have selected what we thought were the most appropriate common names for most of the plants in the guide.

The edatopic grids portray our estimates of the distribution of each species along gradients of ecological moisture and nutrients in the SBS (Fig. 2). The size of each rectangle approximates the relative extent of the corresponding moisture/nutrient regime in the SBS. We must stress that these grids depict qualitative, relative values based on our field observations. The grids do not represent actual physical and chemical measurements. Furthermore, these edatopic estimates apply only within the SBS. Relative scales of moisture and nutrients change from one zone to another and species preferences or tolerances often change as well. These changes also occur within the SBS itself, and although we have generalized the edatopic grid locations over most of the zone, some deviations may be found in the driest and wettest geographical areas.

The species have been divided into and arranged alphabetically within six major groups: shrubs, dwarf woody plants, forbs, graminoids (grasses and sedges), lichens, and bryophytes (liverworts and mosses).

The checklist of SBS plants contains all species known to occur in the zone arranged alphabetically within eight major groups: Trees, shrubs, dwarf woody plants, ferns and fern allies, forbs, graminoids (grasses, sedges and rushes), lichens, and bryophytes (liverworts and mosses). The index is strictly alphabetical.

Figure 2 : Edatopic Grid



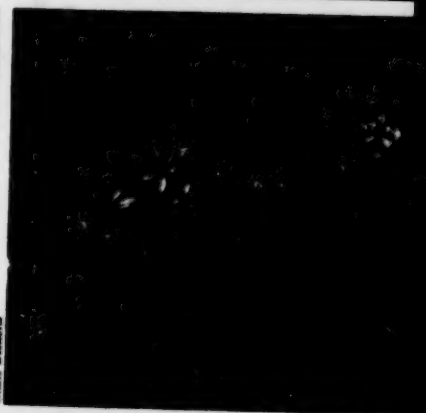
Alnus incana
speckled alder

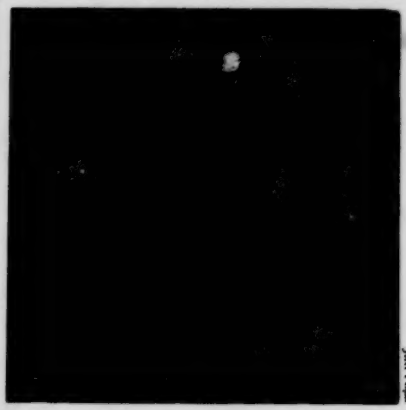
Alnus viridis ssp. *sinuata*
Sitka alder

10cm

Amelanchier alnifolia
Saskatoon

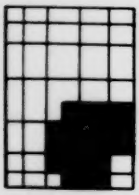
5cm



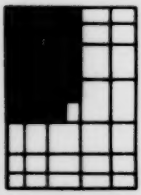


Betula glandulosa
scrub birch

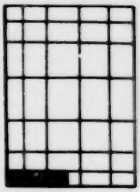
Cornus sericea
red-osier dogwood



Juniperus communis
common juniper



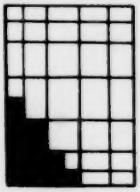
Kalmia microphylla
bog-laurel



2cm

Martin Ross

Ledum groenlandicum
Labrador tea

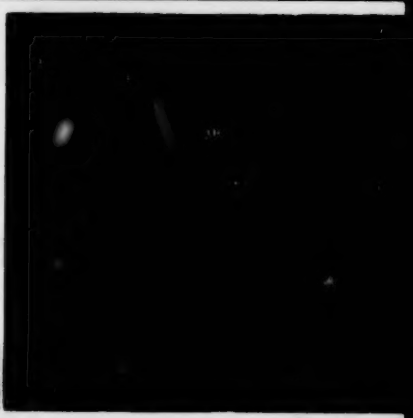


10cm

Jim Pojar

Lonicera involucrata
black twinberry

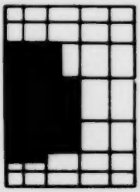
10cm



Frank Boas

2cm

Menziesia ferruginea
rusty false azalea



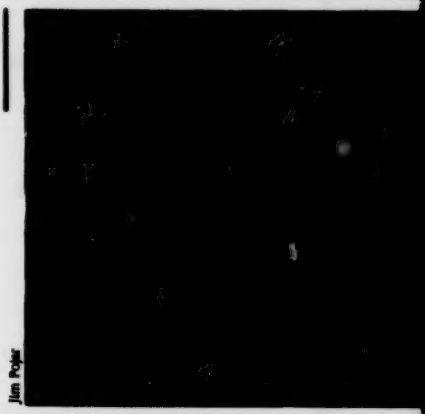
10cm

Oplopanax horridus
devil's club

1 cm

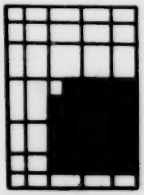
Paxistima myrsinites
false box

Ribes lacustre
black gooseberry



Rosa acicularis
prickly rose

Rubus idæus
raspberry

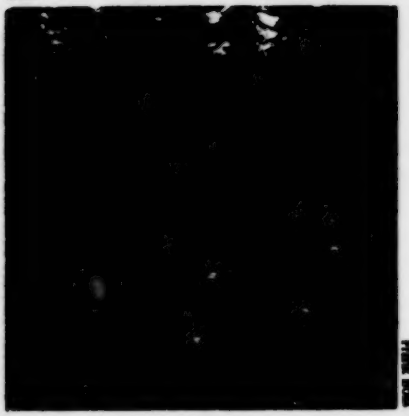


Rubus parviflorus
thimbleberry

10cm

Salix bebbiana
Bebb's willow

10cm

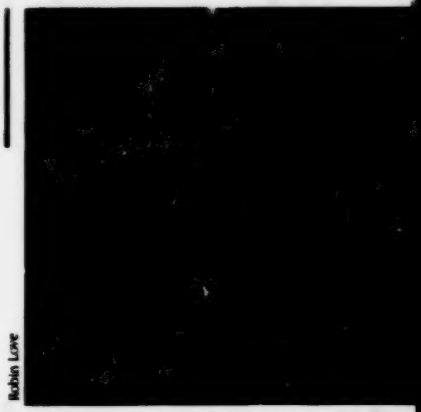


Sambucus racemosa
red elderberry

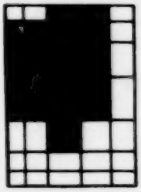
1m

Shepherdia canadensis
soopolallie

5cm



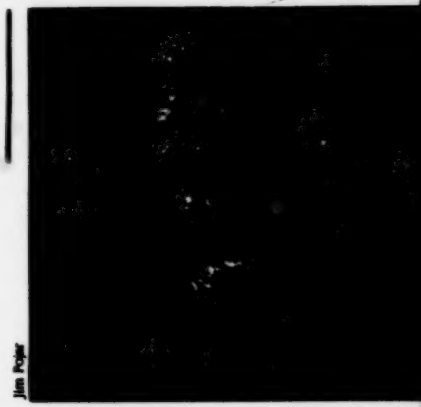
Spiræa betulifolia
birch-leaved spirea



5cm

Spiræa douglasii
ssp. *menziesii*
pink spirea

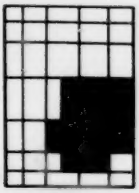
5cm



Jim Pojar

Spirœa pyramidata
pyramid spirea

5cm



Frank Boas

Symphoricarpos albus
snowberry

10cm

Robert Norton

Vaccinium membranaceum
black huckleberry

5cm

Vaccinium myrtilloides
velvet-leaved blueberry

2cm

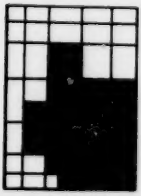
Frank Boas

Vaccinium ovalifolium
oval-leaved blueberry

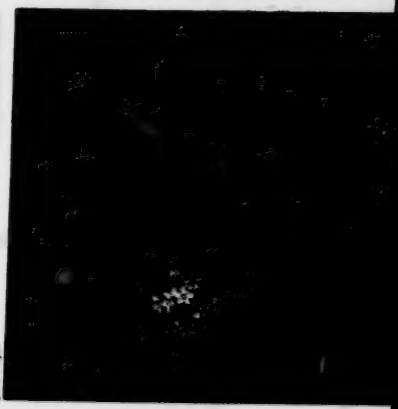
10cm

Frank Boas

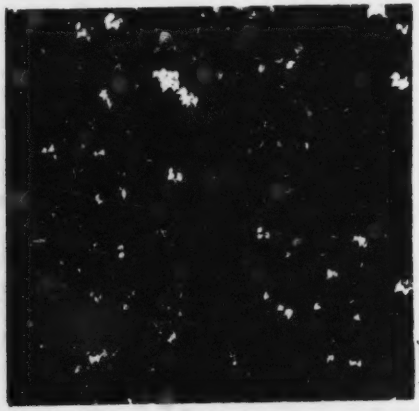
Viburnum edule
highbush-cranberry



5cm

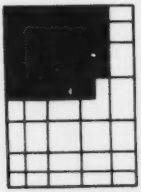


Jim Pojar



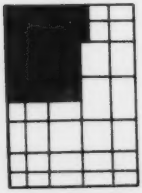
10cm

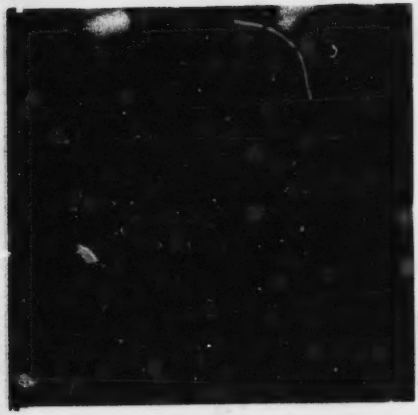
Arctostaphylos uva-ursi
kinnikinnick; bearberry



5cm

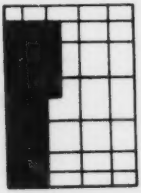
Chimaphila umbellata
pipsissewa; prince's pine



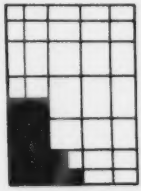


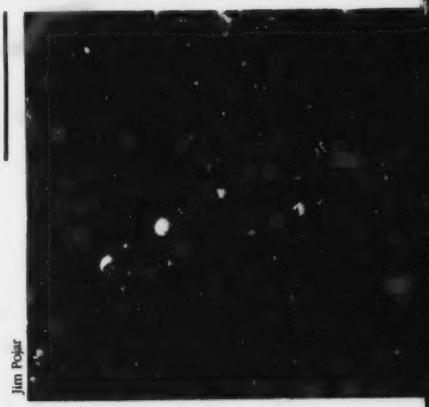
2cm

Empetrum nigrum
crowberry

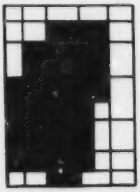


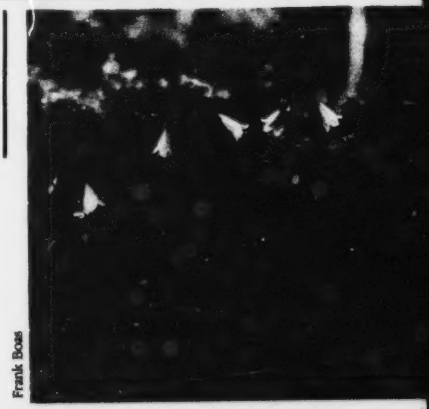
Gaultheria hispidula
creeping-snowberry



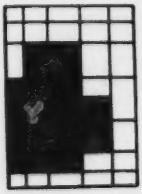


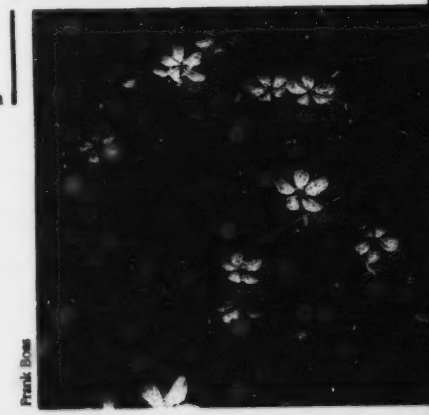
Linnæa borealis
twinflower

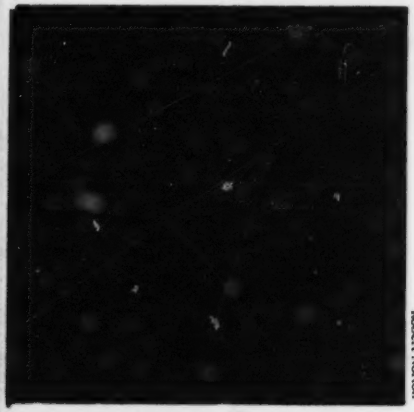




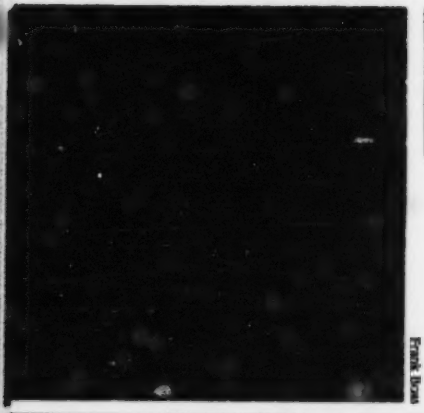
Rubus pedatus
five-leaved bramble







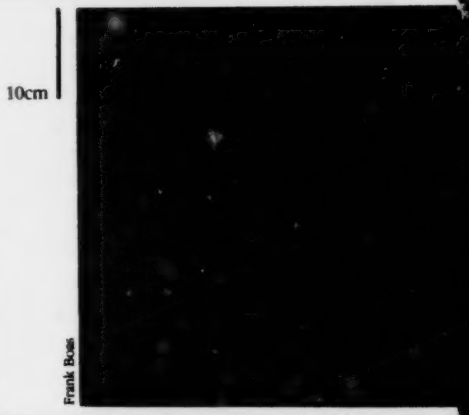
Rubus pubescens
trailing raspberry



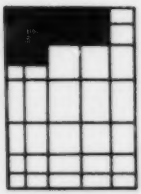
Vaccinium cæspitosum
dwarf blueberry

Vaccinium vitis-idæa
lingonberry

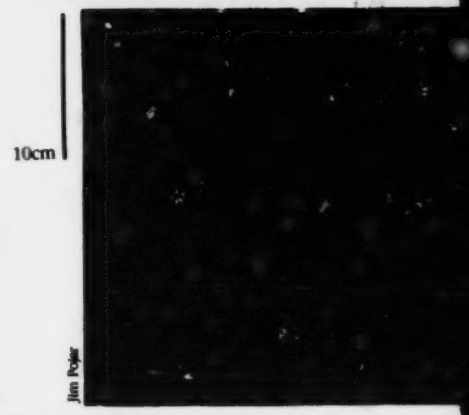
Actæa rubra
baneberry



Antennaria microphylla
rosy pussytoes

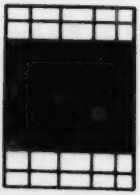


Apocynum androsæmifolium
spreading dogbane



Aralia nudicaulis
false sarsaparilla

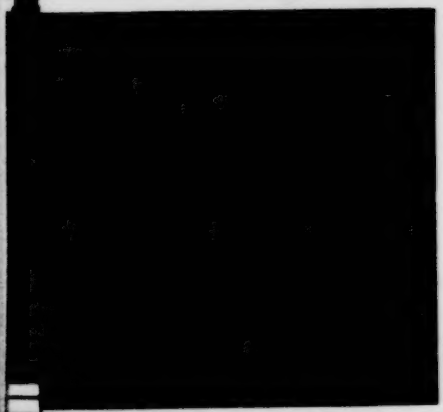
Arnica cordifolia
heart-leaved arnica



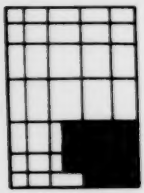
Aruncus dioicus
spaghetti flower;
goat's-beard

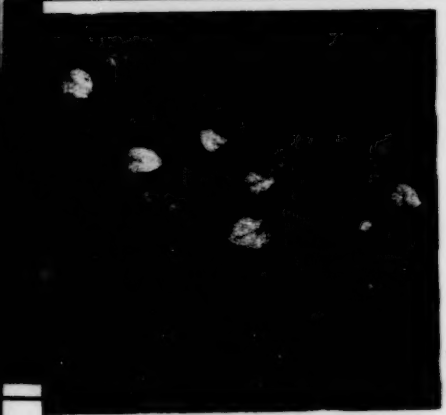
Aster ciliolatus
fringed aster

Aster conspicuus
showy aster



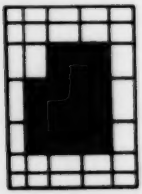
Athyrium filix-femina
lady fern



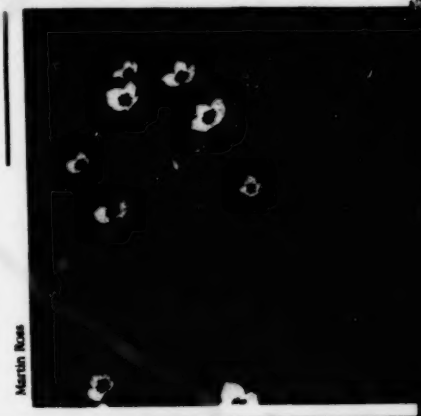


Circæa alpina
enchanter's nightshade

Clintonia uniflora
queen's cup; bluebead

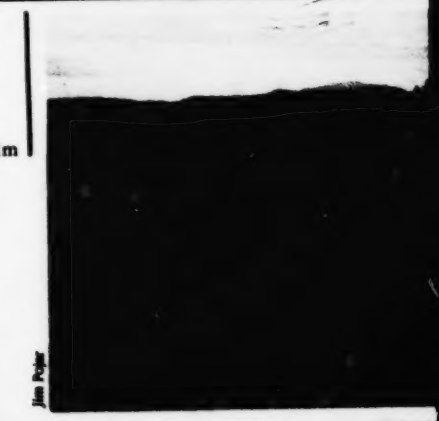


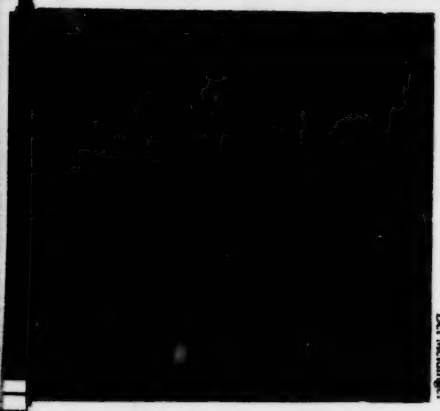
Cornus canadensis
bunchberry



Dryopteris assimilis
spiny wood fern

Epilobium angustifolium
fireweed



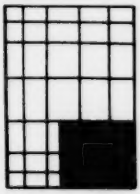


10cm

Equisetum arvense
common horsetail

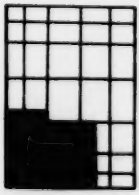
10cm

Equisetum pratense
meadow horsetail

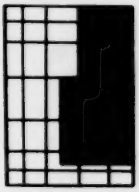


10cm

Equisetum sylvaticum
wood horsetail

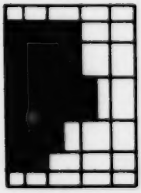


Galium boreale
northern bedstraw

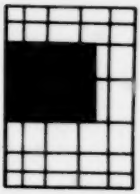


Galium triflorum
creeping sweet bedstraw

Geocaulon lividum
bastard toadflax



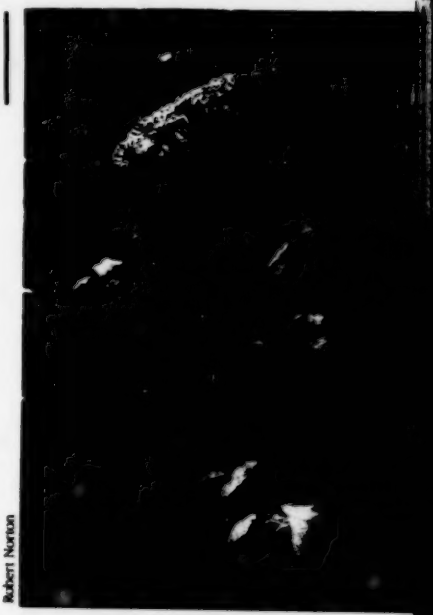
Goodyera oblongifolia
rattlesnake orchid



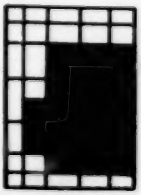
Gymnocarpium dryopteris
oak fern

Lathyrus nevadensis
purple peavine

Heracleum sphondylium
cow-parsnip

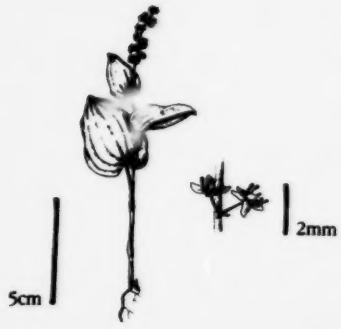


Lathyrus ochroleucus
creamy peavine



Listera cordata
heart-leaved twayblade

Lycopodium annotinum
stiff club-moss

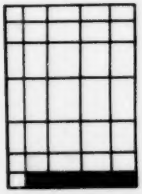


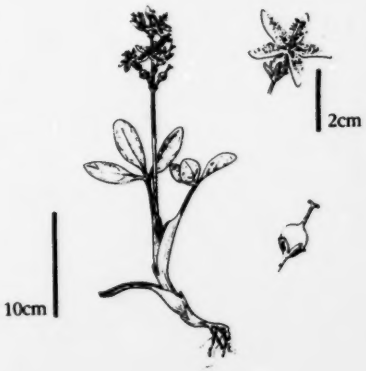
Maianthemum canadense
false lily-of-the-valley

Matteucia struthiopteris
ostrich fern

Melampyrum lineare
cow-wheat

Menyanthes trifoliata
bogbean; buck bean

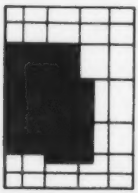




Robert Norton

5cm

Orthilia secunda
one-sided wintergreen

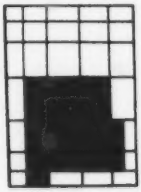


Frank Boas

5cm

Osmorhiza chilensis
sweetcicely

Pyrola asarifolia
rosy wintergreen



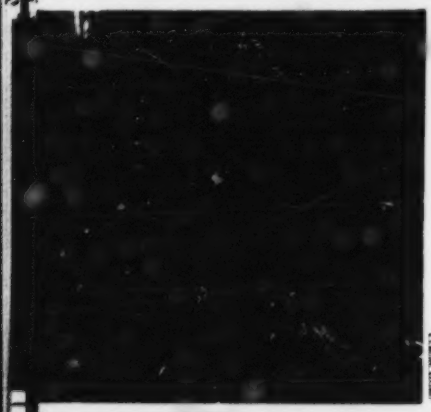
5cm

Robert Norton

Pyrola chlorantha
green wintergreen

10cm

Robert Norton

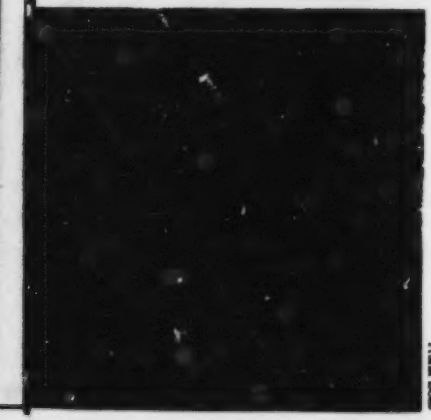


10cm

Petasites palmatus
palmate colt's-foot

10cm

Smilacina racemosa
false Solomon's-seal

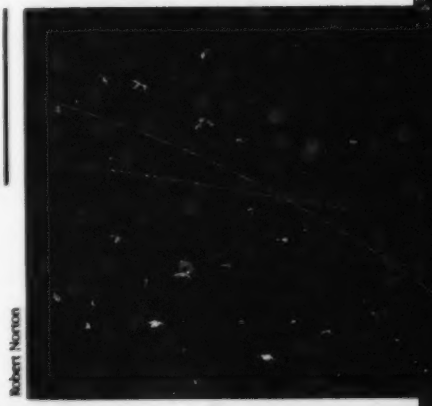


10cm

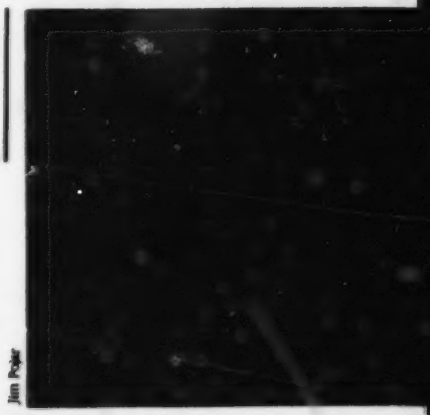
Streptopus amplexifolius
clasping-leaved twistedstalk

Streptopus roseus
rosy twistedstalk

Thalictrum occidentale
western meadow-rue



Tiarella trifoliata
three-leaved foamflower;
sugar scoops

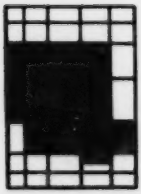


10cm

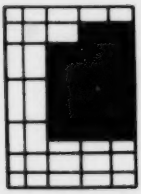
Urtica dioica
stinging nettle

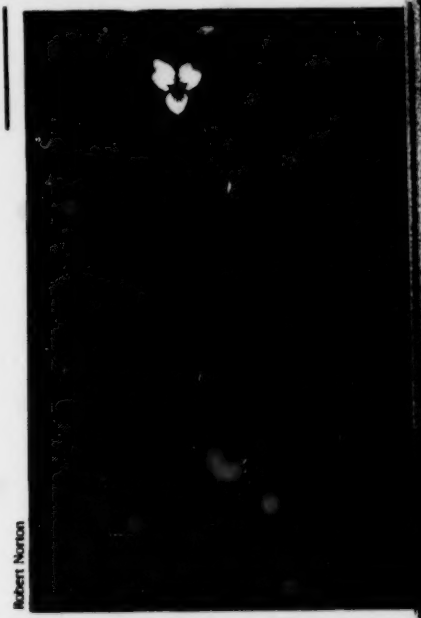
5cm

Vicia americana
American vetch

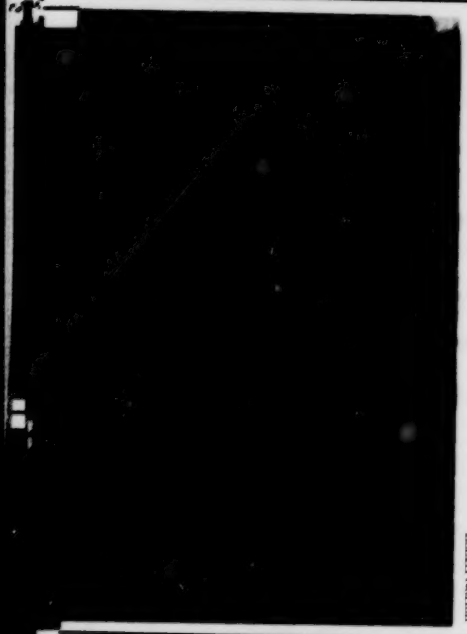


Viola canadensis
Canada violet





Viola glabella
yellow stream violet



Robert Nuttall

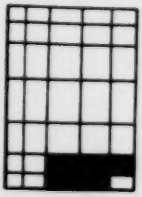
10cm

Carex aquatilis
water sedge

Frank Bo

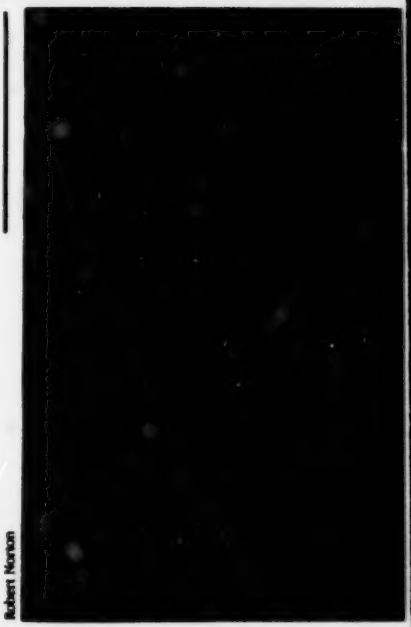
10cm

Carex disperma
soft-leaved sedge



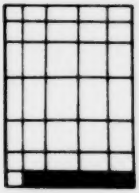
Carex praticola
meadow sedge

Carex rossii
Ross' sedge



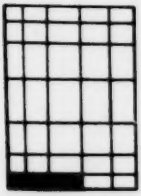
10cm

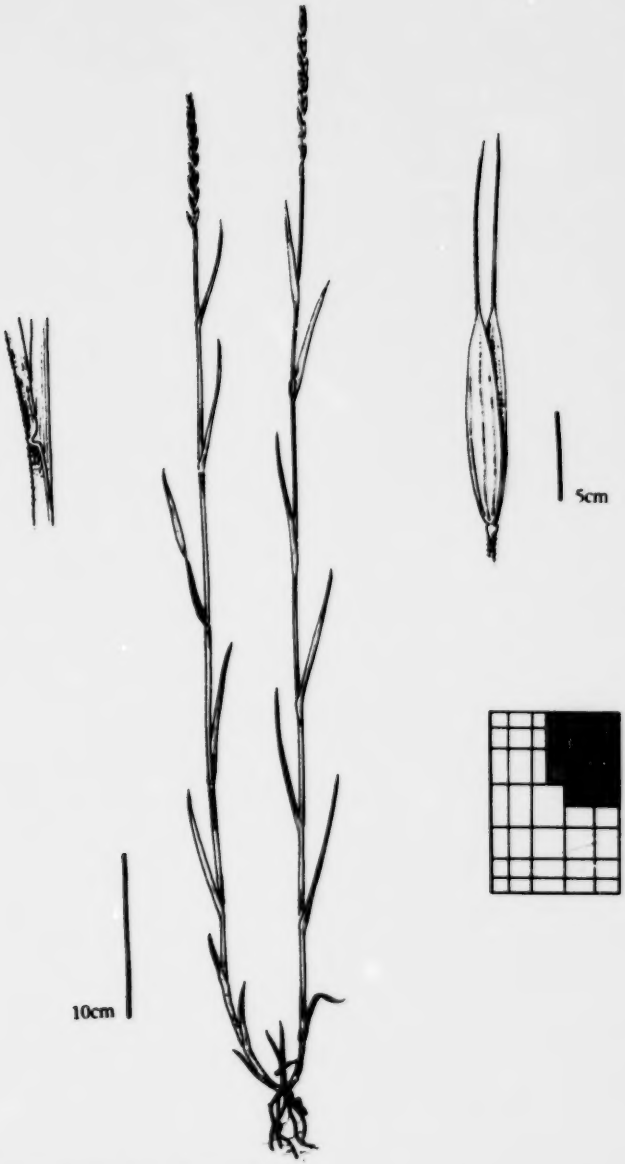
Carex rostrata
beaked sedge



10cm

Eriophorum chamissonis
Chamisso's cotton-grass



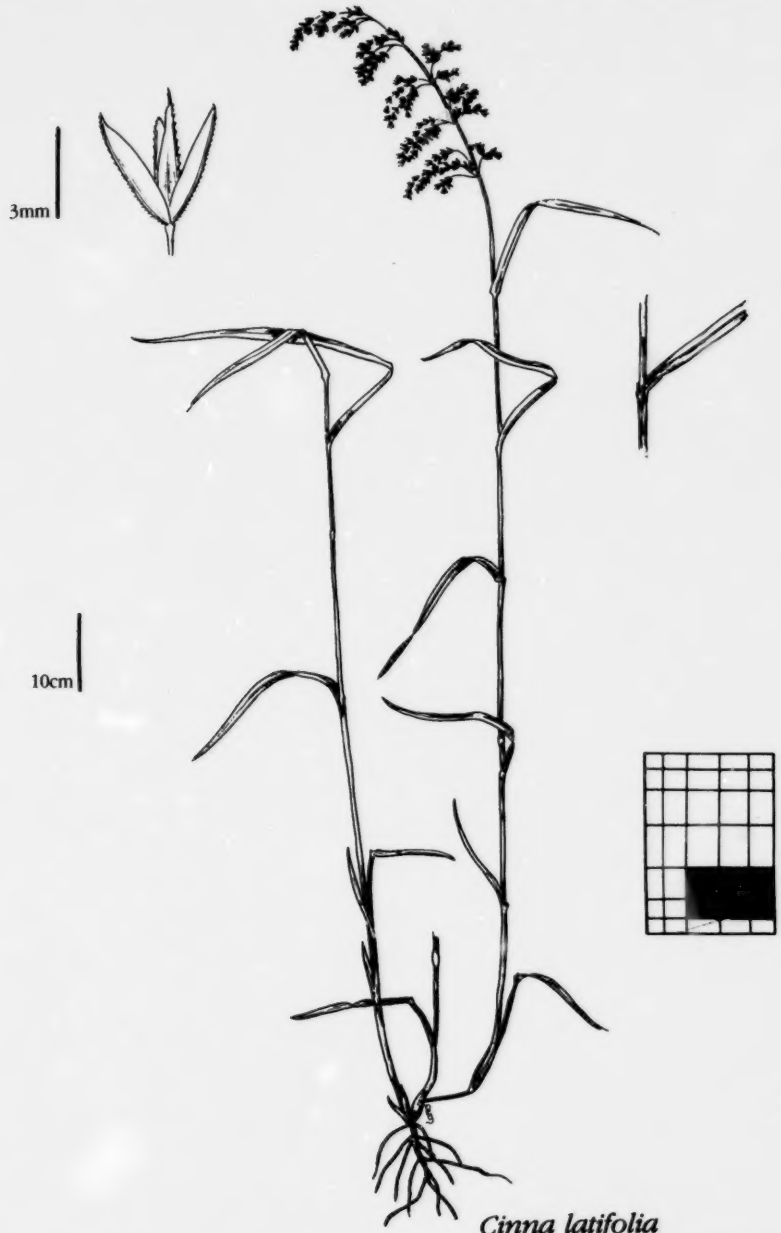


Agropyron trachycaulum
slender wheat grass

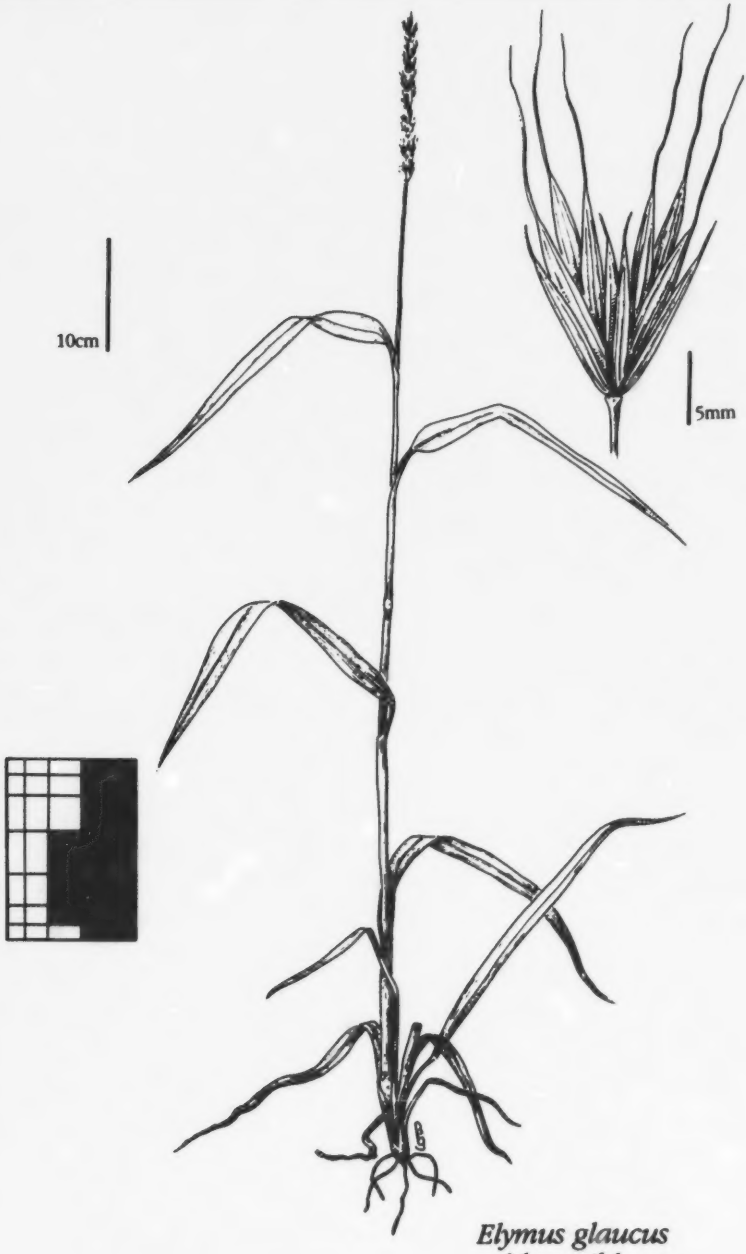
Bromus vulgaris
common brome

Calamagrostis canadensis
bluejoint; Canada
reed grass

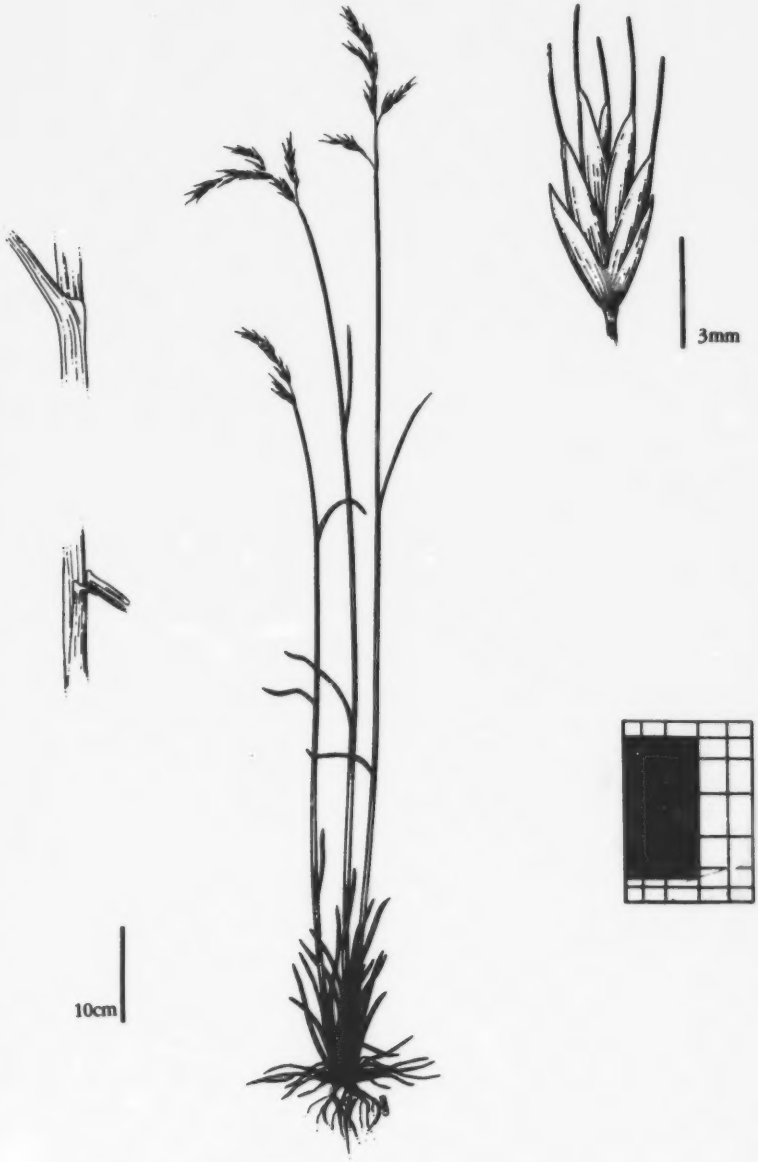
Calamagrostis rubescens
pine grass



Cinna latifolia
nodding wood-reed

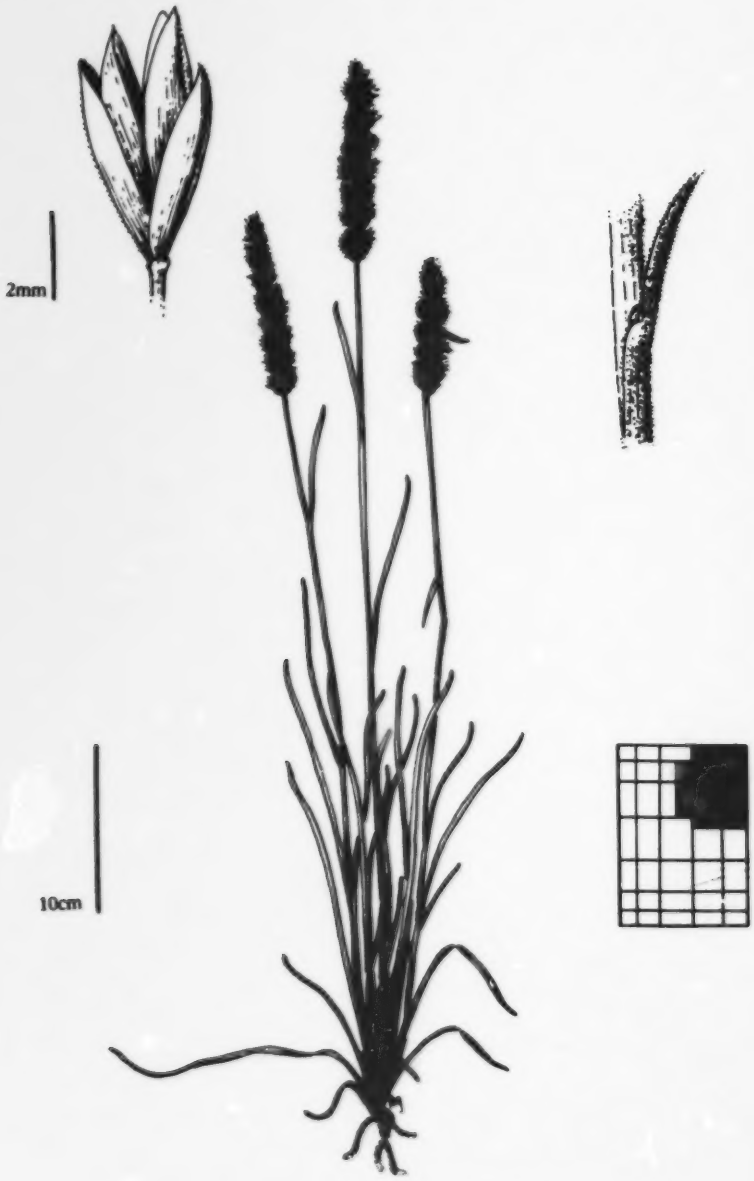


Elymus glaucus
blue wild rye



Festuca occidentalis
western fescue

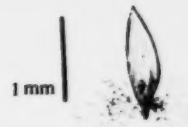
Festuca saximontana
Rocky Mountain fescue

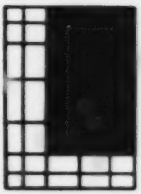


Koeleria macrantha
June grass

Oryzopsis asperifolia
rough-leaved rice grass

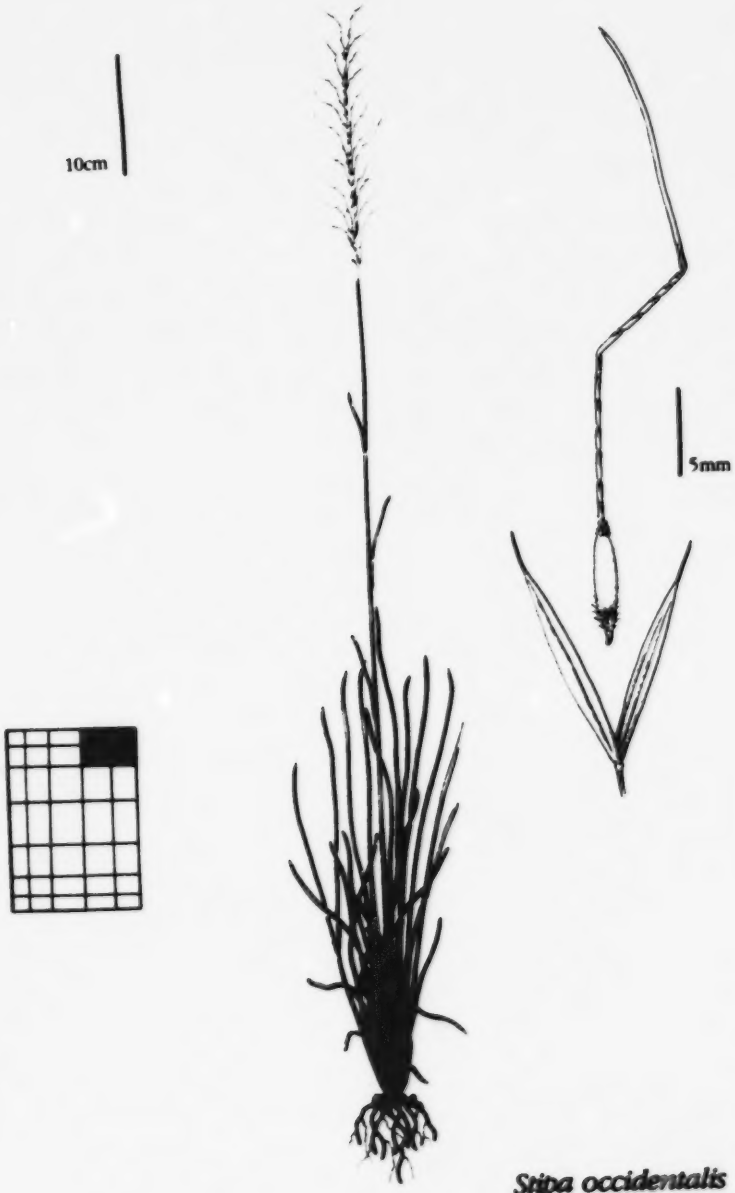
Oryzopsis pungens
short-awned rice grass



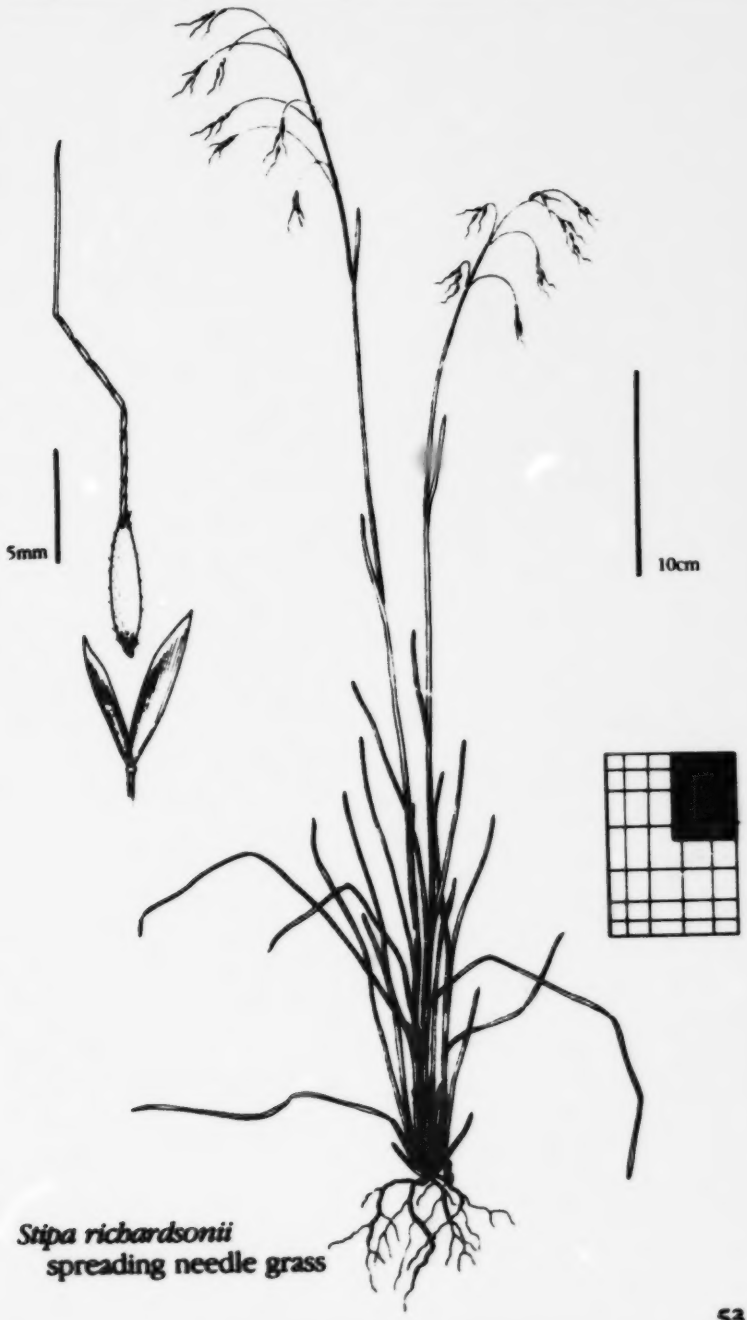


Poa pratensis
Kentucky blue grass

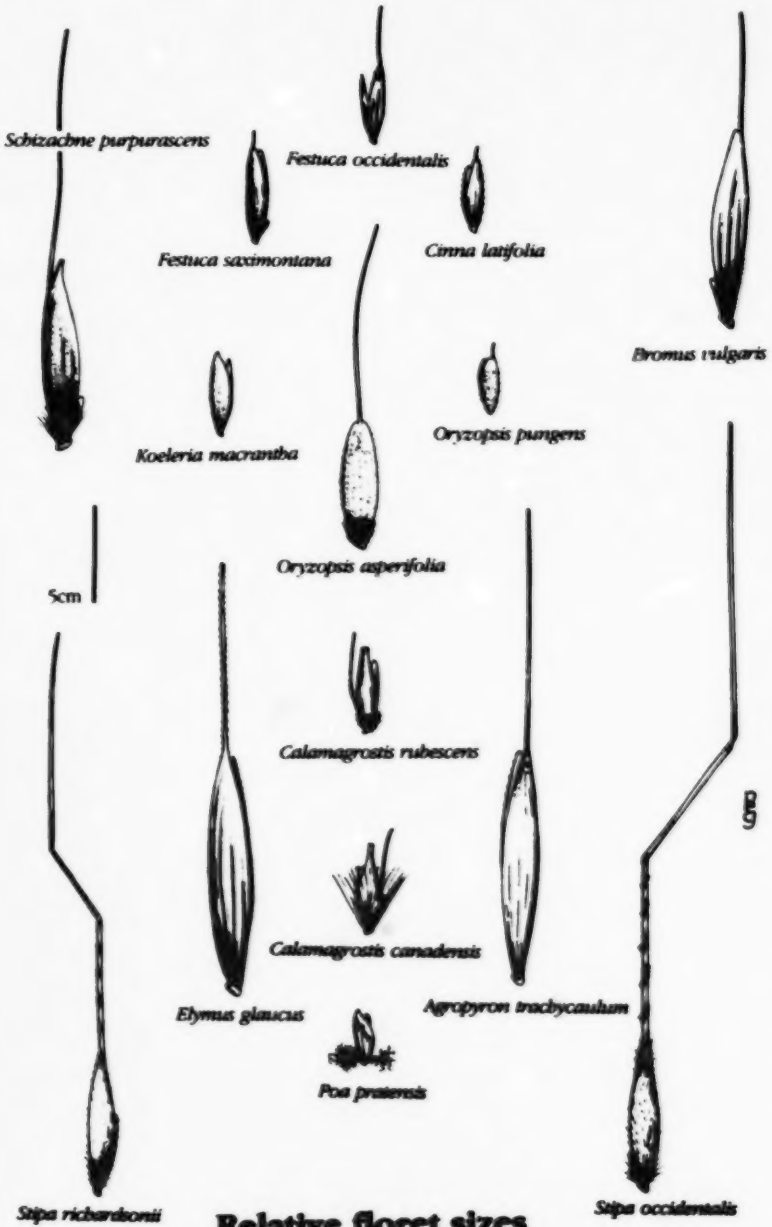
Schizachne purpurascens
false melic



Stipa occidentalis
stiff needle grass

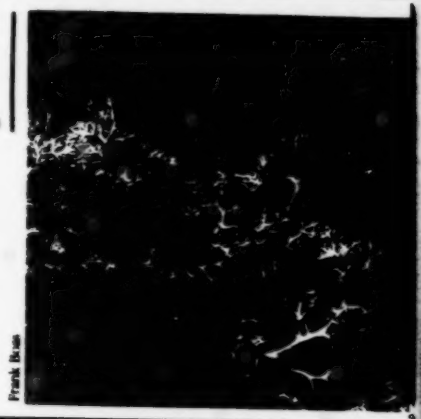


Stipa richardsonii
spreading needle grass

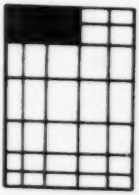


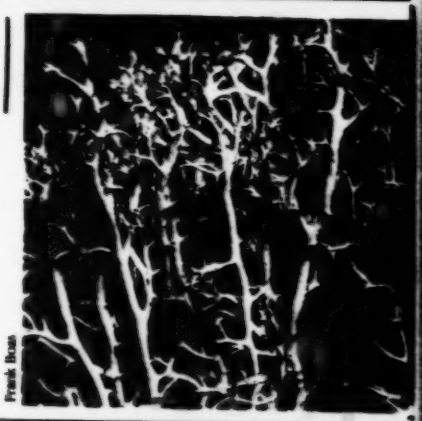
Relative floret sizes

Cladina mitis

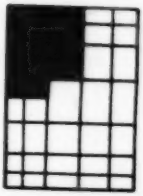


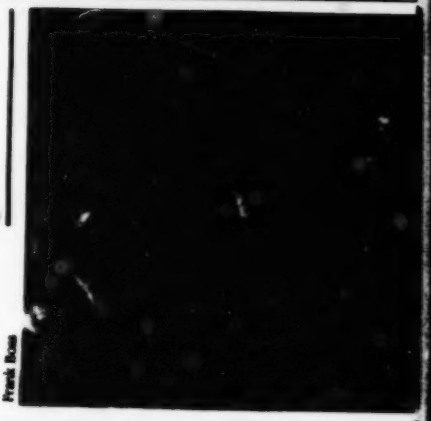
Cladina rangiferina
reindeer lichen





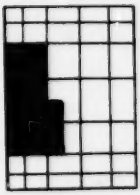
Cladonia chlorophæa
pixie-cup lichen

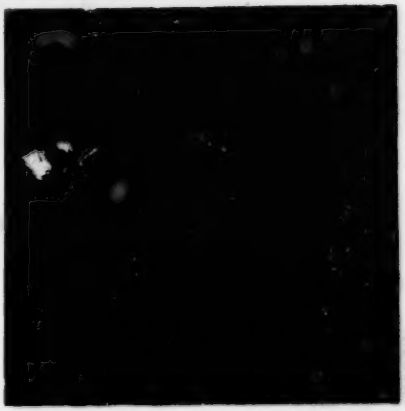




Cladonia gracilis

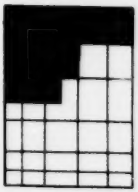
Nephroma arcticum



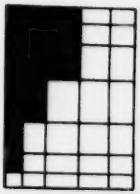


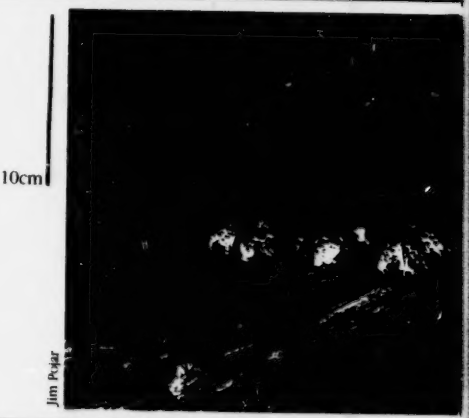
Peltigera aphthosa

Peltigera canina
dog lichen

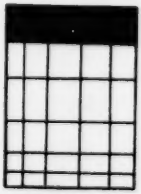


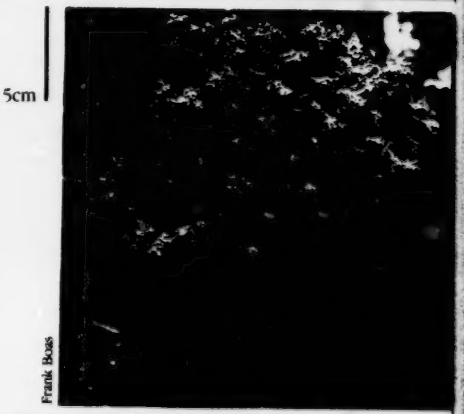
Peltigera malacea

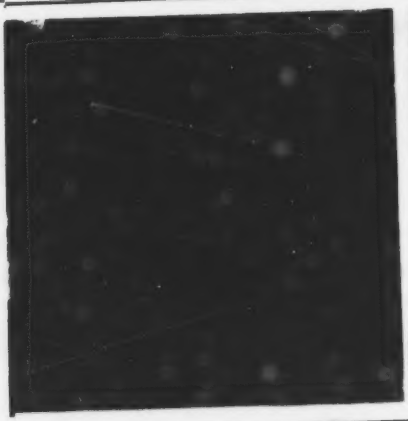




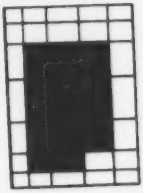
Stereocaulon tomentosum

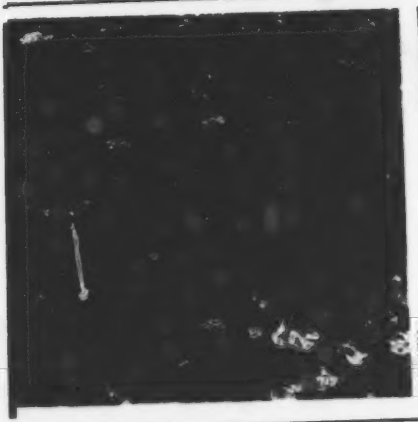




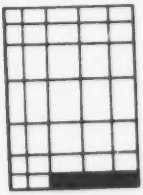


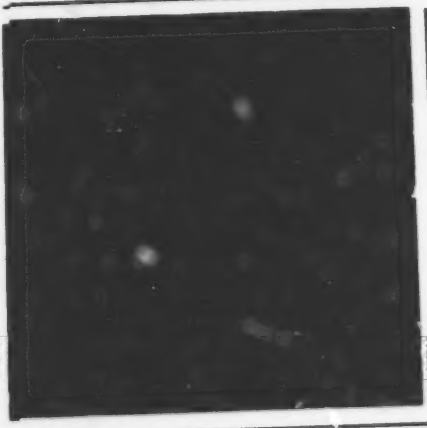
Barbilophozia lycopodioides



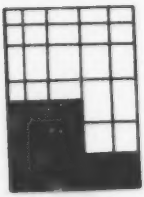


Marchantia polymorpha

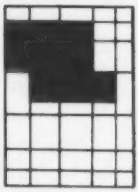




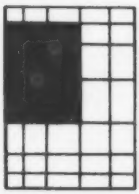
Aulacomnium palustre

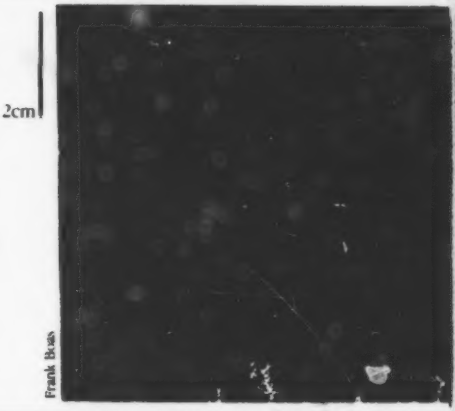


Brachythecium hylotapetum

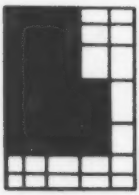


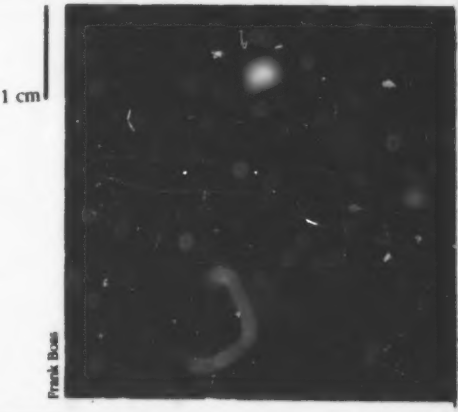
Dicranum fuscescens

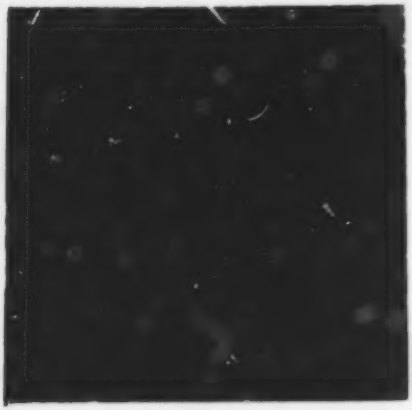




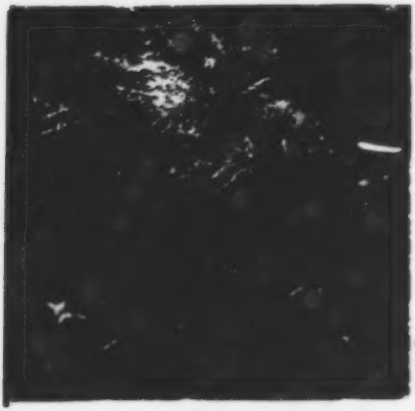
Dicranum polysetum



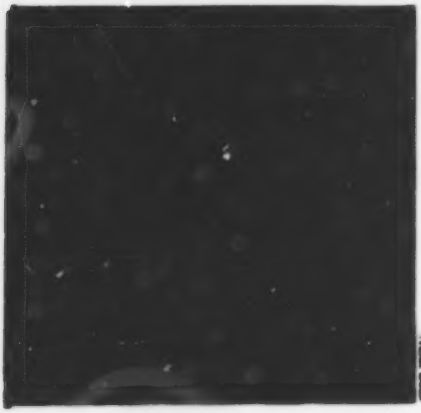




Drepanocladus uncinatus

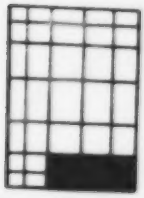


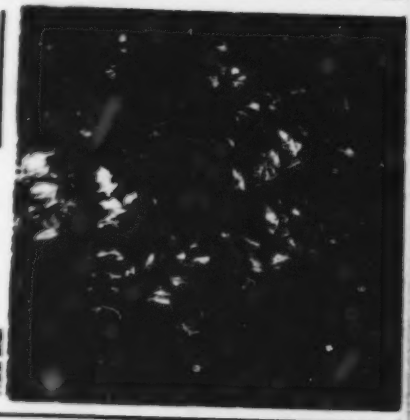
Hylocomium splendens
step moss; stepped feather moss



Mnium glabrescens

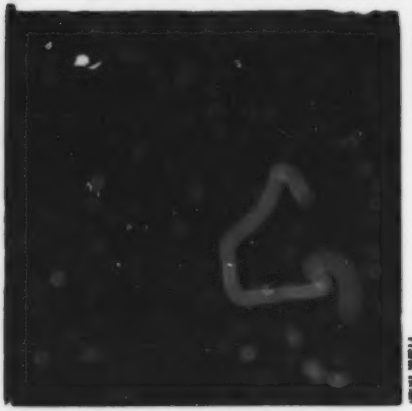
Mnium medium



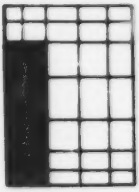


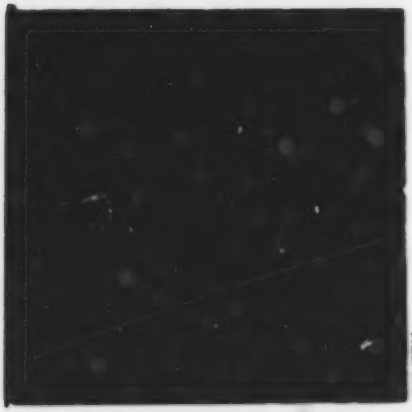
Mnium spinulosum

Pleurozium schreberi
red-stemmed
feather moss

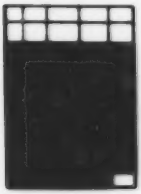


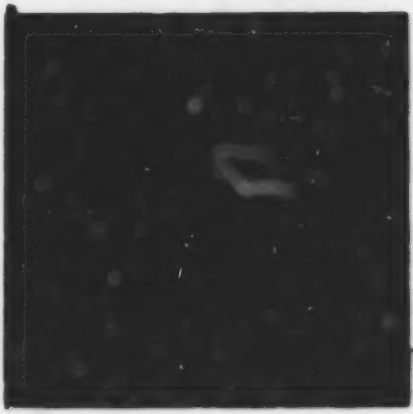
Polytrichum commune
common hair-cap moss





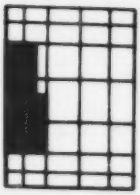
Ptilium crista-castrensis
knight's plume; knight's plume feather moss

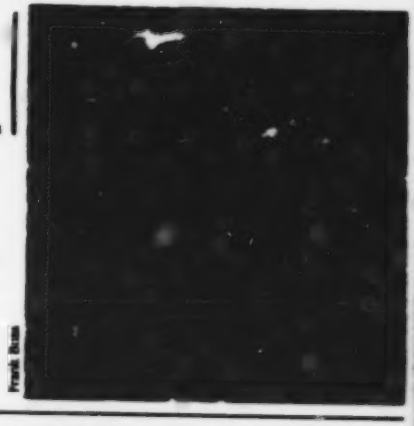




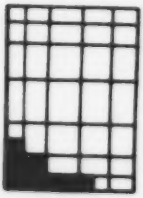
Rhytidiadelphus triquetrus
electrified cat's-tail moss

Rhytidiopsis robusta
pipecleaner moss

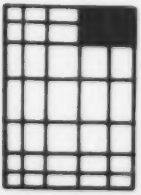




Sphagnum capillaceum
common red sphagnum;
common red peat moss

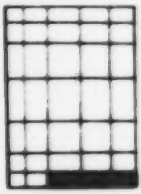


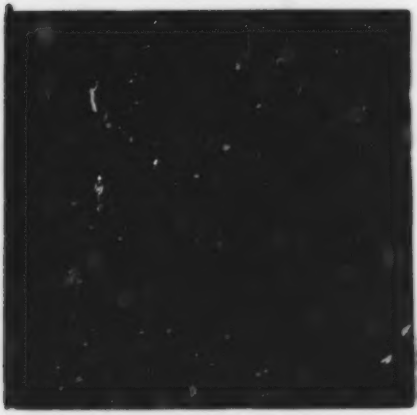
Thuidium abietinum



Timmia austriaca

Tomenthypnum nitens





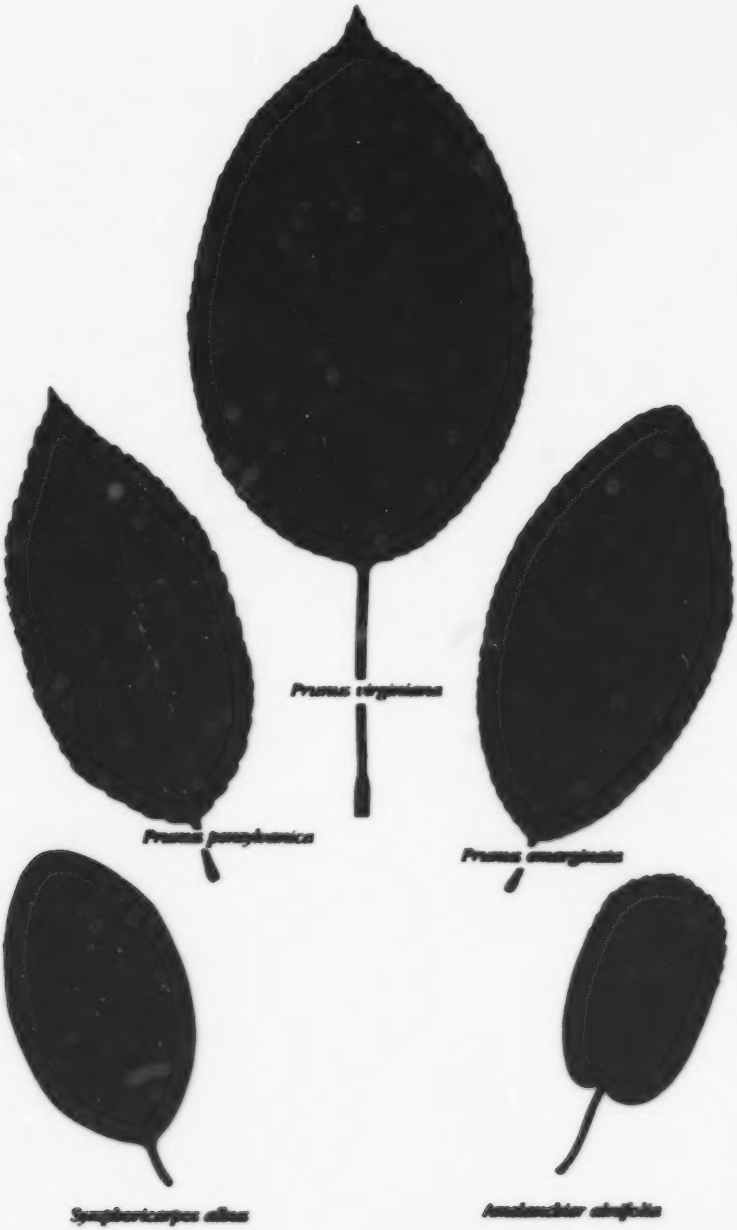
Tortula ruralis

Corylus cornuta

Alnus viridis ssp. *sinuata*

Alnus viridis ssp. *fruticosa*

Alnus incana


Prunus virginiana
Prunus pensylvanica
Prunus emarginata
Symphoricarpos albus
Amelanchier alnifolia

Cornus sericea

Lonicera involucrata

Ribes triste

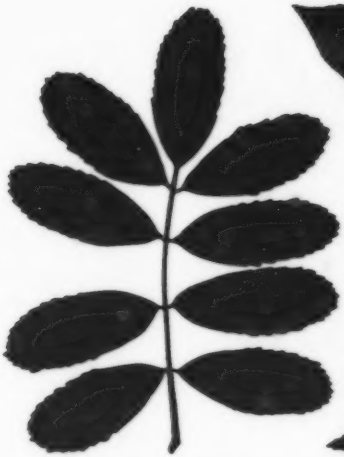
Ribes lacustre

Ribes hudsonianum

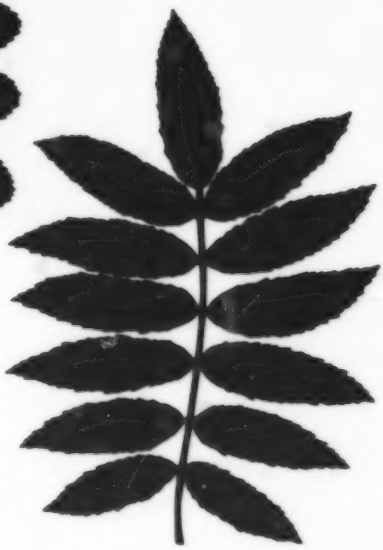
Ribes glandulosum

Ribes oxyacanthoides

Sambucus racemosa



Sorbus sitchensis



Sorbus scopulina

Rosa acicularis

Salix barclayi

Salix glauca

Salix scouleriana

Salix bebbiana

Salix drummondiana

Spiræa betulifolia

Spiræa douglasii ssp. *menziesii*

Spiræa pyramidata

Vaccinium membranaceum

Vaccinium ovalifolium

Vaccinium myrtilloides

Vaccinium cæspitosum

Linnaea borealis

Arctostaphylos uva-ursi

Chimaphila umbellata

Gaultheria hispidula

Vaccinium oxycoccus

Paxistima myrsinites

Vaccinium vitis-idæa

Equisetum fluviatile

Equisetum pratense

Equisetum sylvaticum

Equisetum scirpoides

Equisetum variegatum

Esquisetum arvense

Pteridium aquilinum

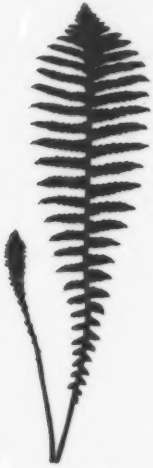
Botrychium virginianum

Dryopteris assimilis

Thelypteris phegopteris

Gymnocarpium dryopteris

Athyrium filix-femina



Matteuccia struthiopteris

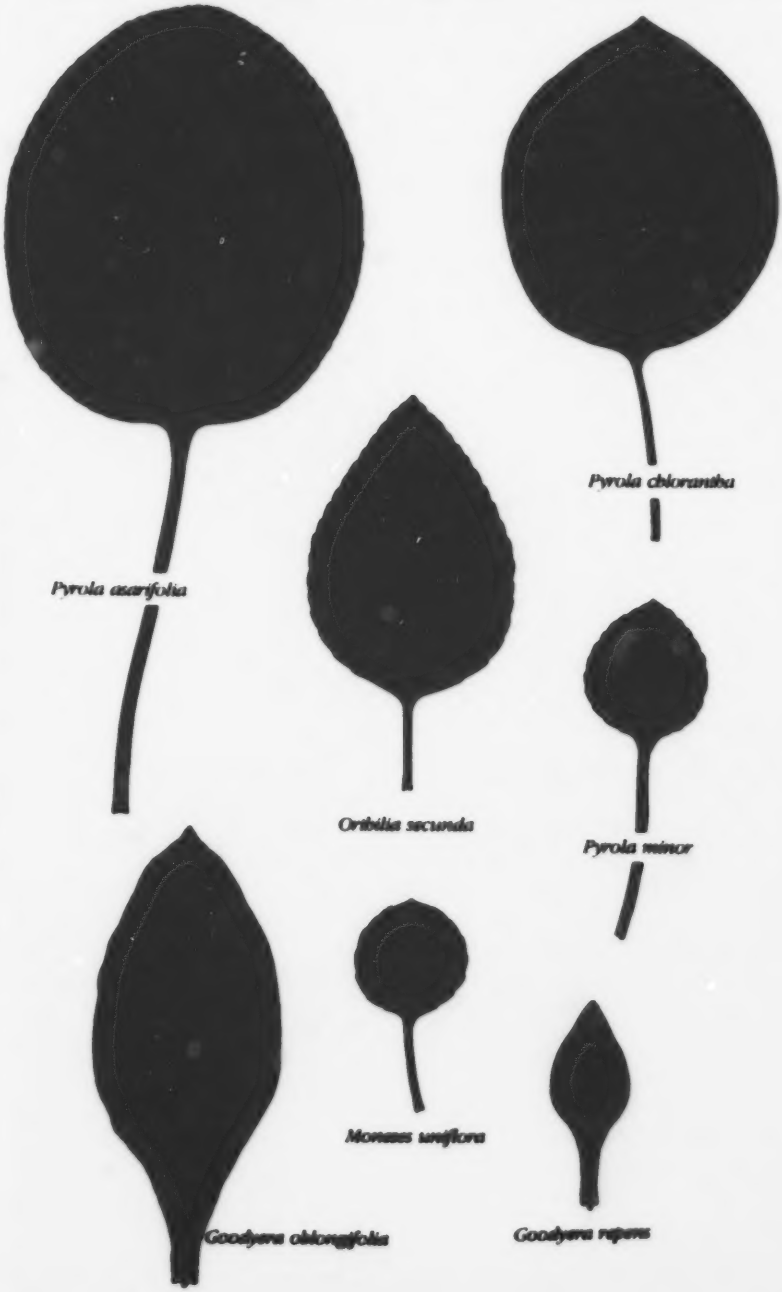
Rubus arcticus

Rubus pedatus

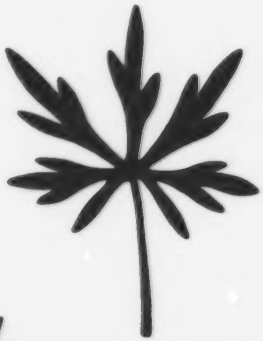
Rubus chamaemorus

Fragaria virginiana

Rubus pubescens


Pyrola asarifolia
Pyrola chlorantha
Orthilia secunda
Pyrola minor
Moneses uniflora
Goodyera oblongifolia
Goodyera repens

Delphinium glaucum



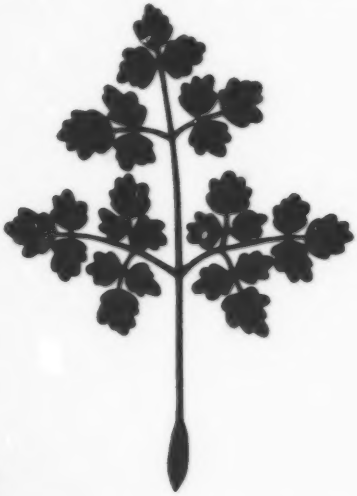
Aconitum delphinifolium

Ranunculus acris

Geranium erianthum

Geranium richardsonii

Aquilegia formosa



Thalictrum occidentale

Actaea rubra

Osmorhiza chilensis

Aruncus dioicus

Aster conspicuus

Epilobium angustifolium

Mertensia paniculata

Arnica cordifolia

Aster modestus

Aster ciliolatus

Disporum hookeri

Streptopus amplexifolius

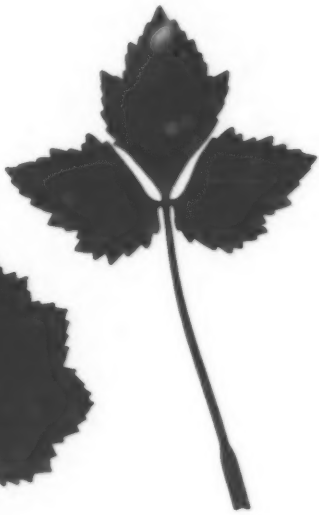
Disporum trachycarpum

Streptopus roseus

Smilacina stellata

Smilacina racemosa

Tiarella unifoliata

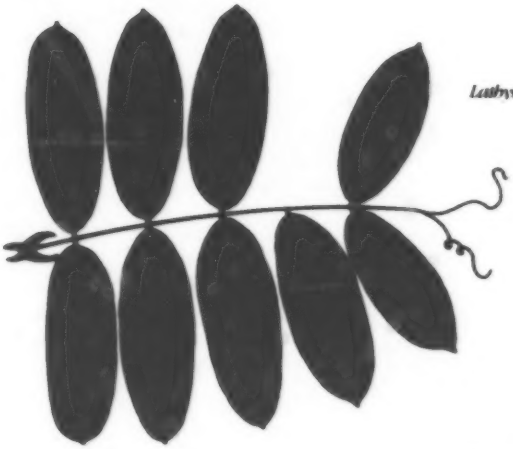


Tiarella trifoliata

Heuchera chlorantha

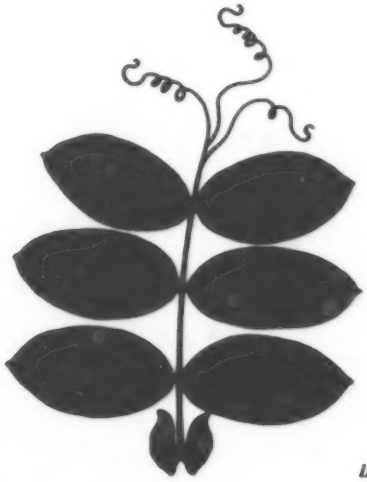
Mitella nuda

Mitella pentandra



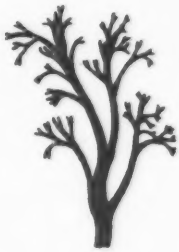
Lathyrus nevadensis

Vicia americana

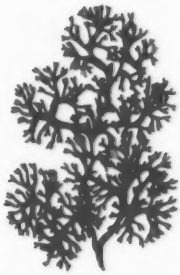


Lathyrus ochroleucus

Cladina rangiferina



Cladina arbuscula



Cladina alpestris

Cladina mitis

Cladonia uncialis

Ptilium crista-castrensis

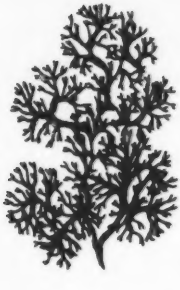
Pleurozium schreberi

Brachythecium hylotapetum

Hylocomium splendens

Cladina rangiferina

Cladina arbuscula



Cladina alpestris

Cladina mitis

Cladonia uncialis

Ptilium crista-castrensis

Pleurozium schreberi

Brachythecium hylotapetum

Hylocomium splendens

A. Trees

Abies lasiocarpa (Hook.) Nutt.

Betula papyrifera Marsh.

Larix laricina (Du Roi) K. Koch

Picea engelmannii Parry *ex* Engelm.
Picea engelmannii x *P. glauca*
Picea glauca (Moench) Voss
Picea mariana (Mill.) Britt., Sterns & Poggenb.
Pinus contorta Doug. *ex* Loud.
Populus balsamifera L. subsp. *balsamifera*
Populus balsamifera L. subsp. *trichocarpa* (Torr. & Gray *ex* Hook.) Brayshaw
Populus tremuloides Michx.
Pseudotsuga menziesii (Mirb.) Franco

Thuja plicata Donn *ex* D. Don in Lamb.
Tsuga heterophylla (Raf.) Sarg.

B. Shrubs

Acer glabrum Torr
Alnus incana (L.) Moench subsp. *tenuifolia* (Nutt.) Breitung
Alnus viridis (Chaix) D.C. in Lam. & D.C. subsp. *fruticosa* (Rupr.) Nyman
Alnus viridis (Chaix) D.C. in Lam. & D.C. subsp. *sinuata* (Regel) Love & Love
Amelanchier alnifolia (Nutt.) Nutt

Betula glandulosa Michx.
Betula glandulosa Michx. var. *glandulifera* (Regel) Gleason
Betula occidentalis Hook.

Caragana arborescens Lam.
Ceanothus sanguineus Pursh
Cornus sericea L. subsp. *sericea*
Corylus cornuta Marsh.
Crataegus columbiana How.
Crataegus douglasii Lindl.

Elaeagnus commutata Bernh. *ex* Rydb.

Juniperus communis L.
Juniperus horizontalis Moench
Juniperus scopulorum Sarg.

Kalmia microphylla (Hook.) Heller subsp. *occidentalis* (Small) Taylor & MacBryde

Ledum groenlandicum Oeder
Lonicera involucrata (Richards.) Banks *ex* Spreng.

Mahonia aquifolium (Pursh) Nutt.
Mahonia repens (Lindl.) G. Don
Menziesia ferruginea Sm.
Myrica gale L.

Oplopanax horridus (Sm.) Miquel

Paxistima myrsinites (Pursh) Raf.

Potentilla fruticosa L.
Prunus emarginata (Doug. *ex* Hook.) Walp.
Prunus pensylvanica L.
Prunus virginiana L.

Rhododendron albiflorum Hook.
Ribes glandulosum Graver
Ribes hudsonianum Richards. in Franklin
Ribes irriguum Doug.
Ribes lacustre (Pers.) Poir. in Lam.
Ribes laxiflorum Pursh
Ribes oxyacanthoides L.
Ribes triste Pall.
Rosa acicularis Lindl.
Rosa gymnocarpa Nutt. in Torr. & Gray
Rosa nutkana Presl
Rosa woodsii Lindl.
Rubus idaeus L.
Rubus parviflorus Nutt.

Salix arbusculoides Anderss.
Salix barclayi Anderss.
Salix bebbiana Sarg.
Salix brachycarpa Nutt.
Salix candida Flugge *ex* Willd.
Salix commutata Bebb
Salix discolor Muhl.
Salix drummondiana Barratt in Hook.
Salix exigua Nutt.
Salix glauca L.
Salix lasiandra Benth.
Salix maccalliana Rowlee
Salix mackenzieana (Hook.) Barratt *ex* Anderss.
Salix myrtillifolia Anderss.
Salix pedicellaris Pursh
Salix planifolia Pursh
Salix pyrifolia Anderss.
Salix scouleriana Barratt in Hook.
Salix sitchensis Sanson in Bong.
Sambucus racemosa L.
Shepherdia canadensis (L.) Nutt.
Sorbus scopulina Greene
Sorbus sitchensis M.J. Roemer
Spiraea betulifolia Pall.
Spiraea douglasii Hook. var *menziesii* (Hook.) Calder & Taylor
Spiraea pyramidata Greene
Symphoricarpos albus (L.) Blake
Symphoricarpos occidentalis Hook.

Vaccinium membranaceum Doug. *ex* Hook.
Vaccinium myrtilloides Michx.
Vaccinium ovalifolium Sm. in Rees
Viburnum edule (Michx.) Raf.

C. Dwarf Woody Plants

Andromeda polifolia L.
Arctostaphylos uva-ursi (L.) Spreng.

Chimaphila umbellata (L.) Barton

Empetrum nigrum L.

Gaultheria hispidula (L.) Muhl.

Linnaea borealis L.

Rubus arcticus L.
Rubus chamaemorus L.
Rubus pedatus Sm.
Rubus pubescens Raf.

Vaccinium caespitosum Michx.
Vaccinium microcarpum (Turcz. ex Rupr.) Schmalhausen
Vaccinium oxycoccos L.
Vaccinium vitis-idaea L.

D. Ferns and Fern-allies

Adiantum pedatum L.
Aspidotis densa (Brackenr.) Lellinger
Asplenium viride Huds.
Athyrium filix-femina (L.) Roth

Botrychium boreale Milde
Botrychium lanceolatum (S.G. Gmel.) Angstr.
Botrychium lunaria (L.) Sw. in Schrad.
Botrychium multifidum (S.G. Gmel.) Trev.
Botrychium virginianum (L.) Sw. in Schrad.

Cryptogramma crispa (L.) R.Br. ex Hook.
Cystopteris fragilis (L.) Bernh. in Schrad.,
Cystopteris montana (Lam.) Desv.

Dryopteris assimilis S. Walker
Dryopteris filix-mas (L.) Schott

Equisetum arvense L.
Equisetum fluviatile L.
Equisetum hyemale L.
Equisetum palustre L.
Equisetum pratense Ehrh.
Equisetum scirpoides Michx.
Equisetum sylvaticum L.
Equisetum variegatum Schleich. ex Web. & Mohr

Gymnocarpium dryopteris (L.) Newm.
Gymnocarpium robertianum (Hoffm.) Newm.

Isoetes echinospora Dur.
Isoetes lacustris L.

Lycopodiella inundata (L.) Holub
Lycopodium annotinum L.
Lycopodium clavatum L.
Lycopodium complanatum L.
Lycopodium obscurum L.

Matteuccia struthiopteris (L.) Todaro

Polystichum kruckebergii W.H. Wagner
Pteridium aquilinum (L.) Kuhn in Decken

Selaginella densa Rydb.
Selaginella wallacei Hieron.

Thelypteris phegopteris (L.) Slosson in Rydb.

Woodsia ilvensis (L.) R.Br.
Woodsia oregana D.C. Eat.
Woodsia scopulina D.C. Eat.

E. Forbs

Achillea millefolium L. var. *lanulosa* (Nutt.) Piper in Piper & Beattie
Aconitum columbianum Nutt. in Torr. & Gray
Aconitum delphiniifolium D.C.
Acorus calamus L.
Actea rubra (Ait.) Willd.
Agastache foeniculum (Pursh) Ktze.
Agrimonia gryposepala Wallr.
Agoseris aurantiaca (Hook.) Greene
Agoseris glauca (Pursh) Raf.
Alisma plantago-aquatica L.
Allium cernuum Roth in Roemer
Amerorchis rotundifolia (Banks ex Pursh) Hult.
Anaphalis margaritacea (L.) Benth. & Hook.
Androsace septentrionalis L.
Anemone cylindrica Gray
Anemone multifida Poir. in Lam.
Anemone parviflora Michx.
Anemone virginiana L.
Angelica arguta Nutt. in Torr & Gray
Antennaria microphylla Rydb.
Antennaria neglecta Greene
Antennaria pulcherrima (Hook.) Greene
Antennaria racemosa Hook.
Anthemis arvensis L.
Apocynum androsaemifolium L.
Aquilegia formosa Fisch. in D.C.
Arabidopsis thaliana (L.) Heynh. in Holl & Heynh.
Arabis divaricarpa Nels.
Arabis hirsuta (L.) Scop.
Arabis nuttallii Robins.
Arabis sparsiflora Nutt. in Torr. & Gray
Aralia nudicaulis L.
Arceuthobium americanum Nutt. ex Engelm.
Arctium minus (Hill) Bernh.
Arenaria serpyllifolia L.
Arnica amplexicaulis Nutt.
Arnica chamissonis Lessing
Arnica cordifolia Hook.
Arnica fulgens Pursh
Arnica latifolia Bong.
Artemisia campestris L.
Artemisia vulgaris L.
Aruncus dioicus (Walt.) Fern.

Aster borealis (Torr. & Gray) Prov.
Aster ciliolatus Lindl. in Hook.
Aster conspicuus Lindl. in Hook.
Aster laevis L.
Aster modestus Lindl. in Hook.
Aster sibiricus L.
Astragalus alpinus L.
Astragalus americanus (Hook.) M.E. Jones
Astragalus tenellus Pursh

Bidens cernua L.
Bistorta vivipara (L.) S.F. Gray
Brassica juncea (L.) Czern.

Calla palustris L.
Callitriche hermaphroditica L.
Callitriche heterophylla subsp. *holanderi* (Hegelm.) Calder & Taylor
Callitriche palustris L.
Calypso bulbosa (L.) Oakes in Z. Thompson
Camelina microcarpa Andrz. ex D.C.
Camelina sativa (L.) Crantz
Capsella bursa-pastoris (L.) Medic.
Cardamine pensylvanica Muhl. ex Willd.
Carum carvi L.
Castilleja miniata Doug. ex Hook.
Castilleja unalaschensis (Cham. & Schlecht.) Malte
Cerastium arvense L.
Ceratophyllum demersum L.
Chamomilla suaveolens (Pursh) Rydb.
Chenopodium album L.
Chenopodium capitatum (L.) Aschers.
Chrysosplenium tetrandrum (Lund) T. Fries
Cicuta bulbifera L.
Cicuta douglasii (D.C.) Coult. & Rose
Circaea alpina L.
Cirsium arvense (L.) Scop.
Cirsium vulgare (Savi) Ten.
Clintonia uniflora (Schult.) Kunth
Coeloglossum viride (L.) Hartm.
Conium maculatum L.
Conringia orientalis (L.) Dumort.
Coptis trifolia (L.) Salisb.
Corallorhiza maculata Raf.
Corallorhiza striata Lindl.
Corallorhiza trifida Chatelain
Cornus canadensis L.
Corydalis aurea Willd.
Corydalis sempervirens (L.) Pers.
Crepis atribarba Heller
Crepis capillaris (L.) Wallr.
Crepis elegans Hook.
Crepis tectorum L.
Cynoglossum boreale Fern.
Cypripedium montanum Doug. ex Lindl.

Daucus carota L.
Delphinium glaucum S. Wats.
Descurainia pinnata (Walt.) Britt.
Descurainia richardsonii (Sweet) Schulz in Engler
Descurainia sophia (L.) Webb ex Prantl in Englere & Prantl
Disporum hookeri (Torr.) Nicholson
Disporum trachycarpum (S. Wats.) Benth & Hook.
Draba nemorosa L.
Dracocephalum parviflorum Nutt.
Drosera anglica Huds.
Drosera rotundifolia L.
Dryas drummondii Richards. in Hook.

Epilobium angustifolium L.
Epilobium ciliatum Rafin.
Epilobium hornemannii Rchb.
Epilobium latifolium L.
Epilobium palustre L.
Erigeron acris L.
Erigeron lonchophyllus Hook.
Erigeron strigosus Muhl. ex Willd.
Erysimum cheiranthoides L.
Erysimum inconspicuum (S. Wats.) MacM.
Euphrasia arctica Lange ex Rostrup

Fallopia convolvulus (L.) Love
Fragaria vesca L.
Fragaria virginiana Duchesne
Fritillaria camschatcensis (L.) Ker-Gawler

Galeopsis bifida Boenn.
Galium boreale L.
Galium trifidum L.
Galium triflorum Michx.
Gentianella amarella (L.) Borner
Geocaulon lividum (Richards.) Fern.
Geranium bicknellii Britt.
Geranium carolinianum L.
Geranium erianthum D.C.
Geranium richardsonii Fisch. & Trautv.
Geum aleppicum Jacq.
Geum macrophyllum Willd.
Geum perincisum Rydb.
Geum rivale L.
Goodyera oblongifolia Rafin.
Goodyera repens (L.) R.Br. in Ait.

Hackelia deflexa (Wahlenb.) Opiz in Berchtold
Halenia deflexa (Sm. in Rees) Griseb.
Hammarbya paludosa (L.) Ktze.
Hedysarum boreale Nutt.
Heracleum sphondylium L.
Heuchera chlorantha Piper
Hieracium albiflorum Hook.
Hieracium aurantiacum L.
Hieracium prealtum Gochnat
Hieracium umbellatum L.
Hippuris vulgaris L.
Hypopitys monotropa Crantz

Impatiens noli-tangere L.
Iris missouriensis Nutt.

Knautia arvensis (L.) Coult.

Lactuca biennis (Moench) Fern.

Lactuca tatarica (L.) C.A. Mey.
Lamium amplexicaule L.
Lathyrus nevadensis S. Wats.
Lathyrus ochroleucus Hook.
Lemna minor L.
Lemna trisulca L.
Lepidium campestre (L.) R.Br. in Ait.
Lepidium densiflorum Schrad.
Leucanthemum vulgare Lam.
Lilium columbianum Hanson *ex* Baker
Linaria vulgaris Hill
Linum lewisii Pursh
Listera borealis Morong
Listera caurina Piper
Listera cordata (L.) R.Br. in Ait.
Lithospermum ruderale Doug. *ex* Lehm.
Lobelia kalmii L.
Lolium perenne L.
Lotus corniculatus L.
Lotus denticulatus (E.R. Drew) Greene
Lupinus arcticus S. Wats.
Lupinus burkei S. Wats.
Lupinus nootkatensis Donn *ex* Sims
Lupinus polyphyllus Lindl.
Lycopus americanus Muhl. *ex* Barton
Lysichiton americanum Hult. & St. John

Maianthemum canadense Desf.
Medicago falcata L.
Medicago lupulina L.
Medicago sativa L.
Melampyrum lineare Desr. in Lam.
Melilotus alba Desr. in Lam.
Melilotus officinalis (L.) Lam.
Mentha arvensis L.
Menyanthes trifoliata L.
Mertensia paniculata (Ait.) G. Don
Mimulus guttatus D.C.
Mimulus tilingii Regel
Mitella nuda L.
Mitella pentandra Hook.
Moehringia lateriflora (L.) Fenzl
Monarda fistulosa L.
Moneses uniflora (L.) Gray
Monotropa uniflora L.
Montia chammisoi (Ledeb. *ex* Spreng.) Greene
Montia linearis (Doug. *ex* Hook.) Greene
Myosotis arvensis (L.) Hill
Myriophyllum spicatum L. subsp. *exalbescens* (Fern.) Hult.
Myriophyllum verticillatum L.

Neslia paniculata (L.) Desv.
Nuphar lutea (L.) Sibth. & Smith
Nymphaea tetragona Georgi

Orobanche fasciculata Nutt.
Orthilia secunda (L.) House
Osmorhiza chilensis Hook. & Arn.
Osmorhiza depauperata Philippi
Osmorhiza purpurea (Coult. & Rose) Sulsd.
Oxytropis campestris (L.) D.C.
Oxytropis deflexa (Pall.) D.C.
Oxytropis sericea Nutt. in Torr. & Gray

Parnassia fimbriata Konig
Parnassia palustris L.
Pedicularis bracteosa Benth. in Hook.
Pedicularis labradorica Wirsing
Pedicularis parviflora Sm. in Rees
Pedicularis racemosa Dougl. *ex* Hook.
Penstemon fruticosus (Pursh) Greene
Penstemon procerus Doug. *ex* R.C. Graham
Penstemon serrulatus Menzies *ex* Sm.
Petasites nivalis Greene
Petasites palmatus (Ait.) Gray
Petasites sagittatus (Banks *ex* Pursh) Gray
Petrorhagia saxifraga (L.) Link
Phacelia franklinii (R.Br.) Gray
Phacelia sericea (Grah.) Gray
Physostegia parviflora Nutt. *ex* Gray
Plagiobothrys scouleri (Hook. & Arnott) Johnston
Plantago lanceolata L.
Plantago major L.
Platanthera dilatata (Pursh) Lindl. *ex* L.C. Beck
Platanthera hyperborea (L.) Lindl.
Platanthera obtusata (Banks *ex* Pursh) Lindl.
Platanthera orbiculata (Pursh) Lindl.
Platanthera stricta Lindl.
Platanthera unalascensis (Spreng.) Kurtz
Polemonium caeruleum L.
Polygonum amphibium L.
Polygonum aviculare L.
Polygonum douglasii Greene
Potamogeton amplifolius Tuckerman
Potamogeton epihydrus Raf.
Potamogeton filiformis Pers.
Potamogeton gramineus L.
Potamogeton natans L.
Potamogeton pectinatus L.
Potamogeton prælongus Wulf. in Roem.
Potamogeton pusillus L.
Potamogeton richardsonii (Bennett) Rydb.
Potamogeton robbinsii Oakes
Potamogeton vaginatus Turcz.
Potamogeton zosteriformis Fern.
Potentilla anserina L.
Potentilla argentea L.
Potentilla arguta Pursh
Potentilla glandulosa Lindl.
Potentilla gracilis Dougl. *ex* Hook.
Potentilla norvegica L.
Potentilla palustris (L.) Scop.
Potentilla pensylvanica L.
Prenanthes alata (Hook.) Dietrich
Pterospora andromeda Nutt.
Pyrola asarifolia Michx.
Pyrola chlorantha Sw.
Pyrola elliptica Nutt.
Pyrola minor L.

Ranunculus abortivus L.
Ranunculus acris L.
Ranunculus amphibius James
Ranunculus aquatilis L.
Ranunculus flammula L.
Ranunculus gmelinii D.C.
Ranunculus lapponicus L.
Ranunculus repens L.
Ranunculus reptans L.
Ranunculus sceleratus L.
Ranunculus uncinatus D. Don in G. Don
Rhinanthus minor L.
Rorippa palustris (L.) Bess.
Rorippa sylvestris (L.) Bess.
Rumex acetosa L.
Rumex acetosella L.
Rumex paucifolius Nutt. in S. Wats.

Sagittaria cuneata Sheld.
Sanguisorba canadensis L.
Sanicula graveolens Poepp. ex D.C.
Sanicula marilandica L.
Saxifraga ferruginea Graham
Saxifraga lyallii Engler
Saxifraga nelsoniana D. Don
Saxifraga tricuspidata Rottb.
Scheuchzeria palustris L.
Scirpus lacustris L.
Scirpus microcarpus Presl
Scirpus nevadensis S. Wats.
Scutellaria galericulata L.
Scutellaria lateriflora L.
Senecio canus Hook.
Senecio eremophilus Richards. in Franklin
Senecio indecorus Greene
Senecio pauperculus Michx.
Senecio pseudaureus Rydb.
Senecio streptanthifolius Greene
Senecio triangularis Hook.
Senecio vulgaris L.
Silene alba (Mil.) Krause in Sturm
Silene csereii Baumg.
Silene dioica (L.) Clairv.
Silene drummondii Hook.
Silene menziesii Hook.
Silene noctiflora L.
Silene vulgaris (Moench) Garcke
Sisymbrium altissimum L.
Sisyrinchium montanum Greene
Sium suave Walt.
Smilacina racemosa (L.) Desf.
Smilacina stellata (L.) Desf.
Solidago canadensis L.
Solidago multiradiata Ait.
Solidago spathulata D.C.
Sonchus arvensis L.
Sonchus asper (L.) Hill
Sparganium emersum Rehmann
Sparganium emersum Rehmann var. *angustifolium* (Michx.) Taylor & MacBryde
Sparganium eurycarpum Engelm. in Gray
Spiranthes romanzoffiana Cham.
Spirodela polyrhiza (L.) Schleiden
Stachys palustris L.
Stellaria calycantha (Ledeb.) Bong.
Stellaria crispa Cham. & Schlecht.
Stellaria longipes Goldie
Stellaria umbellata Turcz. ex Karel. & Kiril.
Streptopus amplexifolius (L.) D.C. in Lam. & D.C.
Streptopus roseus Michx.
Suaeda depressa (Pursh) S. Wats.

Tanacetum vulgare L.
Taraxacum officinale Web. in Wiggers
Tellima grandiflora (Pursh) Doug. ex Lindl.
Thalictrum dasycarpum Fisch. & Ave-Lall. in Fisch. & Mey.
Thalictrum occidentale Gray
Thalictrum sparsiflorum Turcz. ex Fisher & Mey.
Thalictrum venulosum Trel.
Thlaspi arvense L.
Thymus serpyllum L.
Tiarella trifoliata L.
Tiarella unifoliata Hook.
Tofieldia glutinosa (Michx.) Pers.
Tofieldia pusilla (Michx.) Pers.
Tragopogon dubius Scop.
Tragopogon pratensis L.
Trientalis europaea L. subsp. *arctica* (Fisch. ex Hook.) Hult.
Trifolium hybridum L.
Trifolium pratense L.
Trifolium repens L.
Triglochin maritimum L.
Triglochin palustre L.
Typha latifolia L.

Urtica dioica L.
Utricularia intermedia Hayne in Schrad.
Utricularia minor L.
Utricularia vulgaris L.

Valeriana dioica L.
Valeriana sitchensis Bong.
Veratrum viride Ait.
Veronica americana Schwein. ex Benth. in D.C.
Veronica peregrina L.
Veronica scutellata L.
Veronica serpyllifolia L.
Veronica wormskjoldii Roem. & Schult.
Vicia americana Muhl.
Vicia cracca L.
Viola adunca Sm. in Rees
Viola canadensis L.
Viola glabella Nutt. in Torr. & Gray
Viola langsdorfii (Regel) Fischer in D.C.
Viola nephrophylla Greene
Viola orbiculata Geyer in Hook.
Viola palustris L.
Viola renifolia Gray
Viola sempervirens Greene

Zannichellia palustris L.

F. Graminoids

(i) Grass Family (Poaceæ)

Agropyron repens (L.) Beauv.
Agropyron spicatum (Pursh) Scribn. & Sm.
Agropyron trachycaulum (Link) Malte *ex* H.F. Lewis
Agropyron violaceum (Hornem.) Lange
Agrostis scabra Willd.
Agrostis stolonifera L.
Alopecurus aequalis Sobol.
Alopecurus geniculatus L.
Alopecurus pratensis L.
Apera interrupta (L.) Beauv.
Avena fatua L.

Beckmannia syzigachne (Steud.) Fern.
Bromus anomalus Rupr. *ex* E. Fourn.
Bromus carinatus Hook.
Bromus ciliatus L.
Bromus inermis Leyss.
Bromus mollis L.
Bromus vulgaris (Hook.) Shear

Calamagrostis canadensis (Michx.) Beauv.
Calamagrostis purpurascens R.Br. in Richards.
Calamagrostis rubescens Buckley
Calamagrostis scribneri Beal
Calamagrostis stricta (Timm) Koeler
Cinna latifolia (Trev. *ex* Goppert) Griseb. in Ledeb.

Dactylis glomerata L.
Danthonia californica Boland.
Danthonia spicata (L.) Beauv. *ex* Roem. & Schult.
Deschampsia cespitosa (L.) Beauv.
Deschampsia danthonioides (Trin.) Munro *ex* Benth.

Elymus canadensis L.
Elymus glaucus Buckl.
Elymus hirsutus Presl.

Festuca occidentalis Hook.
Festuca pratensis Huds.
Festuca rubra L.
Festuca saximontana Rydb.
Festuca subulata Trin. in Bong.

Glyceria borealis (Nash) Batchelder
Glyceria elata (Nash) Jones
Glyceria grandis S. Wats. in Gray
Glyceria pulchella (Nash) Schum.
Glyceria striata (Lam.) Hitchc.

Hierochloe odorata (L.) Beauv.
Holcus lanatus L.
Hordeum brachyantherum Nevski
Hordeum jubatum L.

Koeleria macrantha (Ledeb.) Schult.

Melica bulbosa Geyer *ex* Porter & Coult.
Melica spectabilis Scribn.
Melica subulata (Griseb.) Scribn.
Muhlenbergia richardsonis (Trin.) Rydb.

Oryzopsis asperifolia Michx.
Oryzopsis exigua Thrub. in Torr.
Oryzopsis pungens (Torr. *ex* Spreng.) Hitchc.

Phalaris arundinacea L.
Phleum pratense L.
Poa annua L.
Poa canbyi (Scribn.) Howell
Poa compressa L.
Poa glauca M. Vahl
Poa interior Rydb.
Poa juncifolia Scribn.
Poa nemoralis L.
Poa nervosa (Hook.) Vasey
Poa obtusata (Banks & Pursh) Lindl.
Poa palustris L.
Poa pratensis L.
Puccinellia nuttalliana (Schult.) A.S. Hitchc. in Jeps.

Schizachne purpurascens (Torr.) Swallen
Sitanion hystrix (Nutt.) J.G. Sm.
Spartina gracilis Trin.
Stipa comata Trin. & Rupr.
Stipa occidentalis Thurb. *ex* S. Wats.
Stipa richardsonii Link

Torreyochloa pauciflora (Presl) Church
Trisetum cernuum Trin.
Trisetum spicatum (L.) K. Richter

Vahlodea atropurpurea (Wahlenb.) E. Fries in Hartm.

(ii) Sedge Family (Cyperaceæ)

Carex adusta Boott
Carex aenea Fern.
Carex angustior Mack. in Rydb.
Carex aperta Boott in Hook.
Carex aquatilis Wahlenb.
Carex arcta Boott
Carex atherodes Spreng.
Carex athrostachya Olney
Carex aurea Nutt.

Carex backii Boott in Hook.
Carex bebbii (Bailey) Fern.
Carex bolanderi Olney
Carex brunnescens (Pers.) Poir. in Lam.
Carex buxbaumii Wahlenb.

Carex canescens L.
Carex capillaris L.
Carex chordorrhiza Ehrh. in L.
Carex concinna R.Br. in Richards.
Carex concinnoides Mack.
Carex crawfordii Fern.
Carex custichii Mack. in Piper & Beattie

Carex deflexa Hornem.
Carex deweyana Schwein.
Carex diandra Schrank
Carex dioica L.
Carex disperma Dew.
Carex eburnea Boott in Hook.
Carex foenea Willd.
Carex bassei Bailey
Carex heleonastes Ehrh. in L.
Carex hoodii Boot in Hook.
Carex hystericina Muhl. *ex* Willd.
Carex interior Bailey
Carex leeviculmis Meinsh.
Carex lanuginosa Michx.
Carex lasiocarpa Ehrh.
Carex lenticularis Michx.
Carex leptalea Wahlenb.
Carex limosa L.
Carex livida (Wahlenb.) Willd.
Carex loliacea L.
Carex macloviana d'Urv.
Carex media R.Br. in Richards.
Carex mertensii Prescott in Bong.
Carex microglochin Wahlenb.
Carex oederi Retz.
Carex parryana Dew.
Carex pauciflora Lightf.
Carex paupercula Michx.
Carex peckii Howe in Peck
Carex pensylvanica Lam.
Carex petasata Dew.
Carex praegracilis Boott.
Carex prairea Dew.
Carex praticola Rydb.
Carex retrorsa Schwein.
Carex richardsonii R.Br. in Richards.
Carex rossii Boot in Hook.
Carex rostrata Stokes in With.
Carex sartwellii Dew.
Carex saxatilis L.
Carex simulata Mack.
Carex sitchensis Prescott in Bong.
Carex sprengelii Dew. *ex* Sprent.
Carex stenophylla Wahlenb.
Carex stipata (Muhl.) *ex* Willd.
Carex supina Willd. *ex* Wahlenb.
Carex tenera Dew.
Carex tenuiflora Wahlenb.
Carex tonsa (Fern.) Bickn.
Carex trisperma Dew.
Carex vaginata Tausch
Carex vesicaria L.
Eleocharis acicularis (L.) Roem. & Schult.
Eleocharis palustris (L.) Roem. & Schult.
Eleocharis quinqueflora (F.X. Hartm.) Schwarz.
Eriophorum angustifolium Honck.
Eriophorum brachyantherum Trautv. and Mey.
Eriophorum chamissonis C.A. Mey. in Ledeb.
Eriophorum gracile W.D.J. Koch in Roth
Eriophorum vaginatum L.
Eriophorum viridicarinatum (Engelm.) Fern
Kobresia myosuroides (Vill.) Fiori & Paol.
Rhynchospora alba (L.) M. Vahl
Scirpus lacustris L.
Trichophorum alpinum (L.) Pers.
Trichophorum cespitosum (L.) Hartm.

(iii) Rush Family (Juncaceæ)

Juncus alpinoarticulatus Chaix in Vill.
Juncus arcticus Willd.
Juncus bufonius L.
Juncus ensifolius Wilstr.
Juncus filiformis L.
Juncus gerardii Lois. in Desv.
Juncus nodosus L.
Juncus stygius L.
Juncus tenuis Willd.
Juncus vaseyi Engelm.
Luzula parviflora (Ehrh.) Desv.

G. Lichens

Alectoria americana Mot.
Alectoria fremontii Tuck.
Alectoria glabra Mot.
Alectoria positiva (Gyeln.) Mot.
Alectoria sarmentosa (Ach.) Ach.
Alectoria simplicior (Vain.) Synge
Alectoria tenerrima Mot.
Buellia punctata (Hoffm.) Mass.
Buellia zahlbruckneri J. Stein
Caloplaca sinapisperma (Lam.) Mah. & Gill
Cetraria arenaria Karnef.
Cetraria canadensis (Räs.) Räs.
Cetraria cucullata (Bell.) Ach.
Cetraria ericetorum Opiz.
Cetraria hepatizon (Ach.) Vain
Cetraria islandica (L.) Ach.
Cetraria juniperina (L.) Ach.
Cetraria merrillii Du Rietz
Cetraria pinastri (Scop.) S. Gray
Cladina alpestris (L.) Harm.
Cladina arbuscula (Wallr.) Hale & W. Culb.
Cladina mitis (Sandst.) Hale & W. Culb.
Cladina rangiferina (L.) Harm.
Cladonia amaurocraea (Flörke) Schaer.
Cladonia bellidiflora (Ach.) Schaer.

Cladonia botrytes (Hag.) Willd.
Cladonia cariosa (Ach.) Spreng.
Cladonia cenotea (Ach.) Schoer.
Cladonia chlorophaea (Flörke ex Somm.) Spreng.
Cladonia coccifera (L.) Willd.
Cladonia coniocraea (Flörke) Spreng.
Cladonia cornuta (L.) Hoffm.
Cladonia crispata (Ach.) Flot.
Cladonia cristatella Tuck.
Cladonia deformis (L.) Hoffm.
Cladonia ecmocyna (Ach.) Nyl.
Cladonia fimbriata (L.) Fr.
Cladonia furcata (Huds.) Schrad.
Cladonia gonecha (Ach.) Asah.
Cladonia gracilis (L.) Willd.
Cladonia multiformis Merr.
Cladonia nemoxyna (Ach.) Nyl.
Cladonia phyllophora Hoffm.
Cladonia pleurota (Flörke) Schaer.
Cladonia pseudorangiformis Asah.
Cladonia pyxidata (L.) Hoffm.
Cladonia squamosa (Scop.) Hoffm.
Cladonia uncialis (L.) Wigg.
Cladonia verticillata (Hoffm.) Schaer.
Cornicularia aculeata (Schreb.) Ach.
Cybebium inquinans (Sm.) Trev.

Evernia prunastri (L.) Ach.

Hypogymnia austerodes (Nyl.) Räs.
Hypogymnia bitteri (Lynge) Ahti
Hypogymnia enteromorpha (Ach.) Nyl.
Hypogymnia imshaugii Krog
Hypogymnia physodes (L.) W. Wats.
Hypogymnia tubulosa (Schaer.) Hav.

Icmadophila ericetorum (L.) Zahlb.

Lecanora chrysoleuca (Sm.) Ach.
Lecidea granulosa (Ehrh.) Ach.
Lecidea uliginosa (Schrad.) Ach.
Leptogium minutissimum (Flörke) Fr.
Letharia vulpina (L.) Hue
Lobaria pulmonaria (L.) Hoffm.

Nephroma arcticum (L.) Torss.
Nephroma bellum (Spreng.) Tuck.
Nephroma expallidum (Nyl.) Nyl.
Nephroma parile (Ach.) Ach.
Nephroma resupinatum (L.) Ach.

Parmelia elegantula (Zahlbr.) Szat.
Parmelia olivacea (L.) Ach.
Parmelia sulcata Tayl.
Parmelia turactica Kremp.
Parmeliopsis ambigua (Wulf.) Nyl.
Parmeliopsis hyperopta (Ach.) Arn.
Peltigera aphthosa (L.) Willd.
Peltigera canina (L.) Willd.
Peltigera horizontalis (Huds.) Baumg.
Peltigera leucophlebia (Nyl.) Gyeln.
Peltigera malacea (Ach.) Funck
Peltigera membranacea (Ach.) Nyl.
Peltigera polydactyla (Neck.) Hoffm.
Peltigera rufescens (Weis.) Humb.
Peltigera scabrosa Th. Fr.
Peltigera venosa (L.) Baumg.
Platismatia glauca (L.) W. Culb. & C. Culb.
Psoroma hypnorum (Vahl.) S. Gray

Ramalina farinacea (L.) Ach.
Ramalina obtusata (Arn.) Bitt.
Ramalina thrausta (Ach.) Nyl.

Solorina crocea (L.) Ach.
Stereocaulon alpinum Laur.
Stereocaulon grande (Magn.) Magn.
Stereocaulon paschale (L.) Hoffm.
Stereocaulon tomentosum Fr.

Usnea ceratina Ach.
Usnea compacta Mot.
Usnea rugulosa Vain.
Usnea trichodea Ach.

Xanthoria elegans (Link) Th. Fr.
Xanthoria parietina (L.) Th. Fr.

H. Bryophytes

(i) Liverworts

Aneura pinguis (L.) Dum.

Barbilophozia attenuata (Mart.) Loeske
Barbilophozia barbata (Schmid. ex Schreb.) Loeske
Barbilophozia floerkei (Web. et Mohr.) Loeske
Barbilophozia hatcheri (Evans) Loeske
Barbilophozia kunzeana (Huk.) Gams.
Barbilophozia lycopodioides (Wallr.) Loeske
Blepharostoma trichophyllum (L.) Dum.

Cephalozia lunulifolia (Dum.) Dum.
Cephaloziella divaricata (Sm.) Schiffn.
Cephaloziella subdentata Warnst.
Chiloscyphus pallescens (Ehrh. ex Hoffm.) Dum.
Chiloscyphus polyanthos (L.) Corda
Conocephalum conicum (L.) Lindb.

Geocalyx graveolens (Schrad.) Nees

Jamesoniella autumnalis (D.C.) Steph.
Jungermannia leiantha Grolle

Lepidozia reptans (L.) Dum.
Lophocolea minor Nees.
Lophozia alpestris (Schleich. ex Web.) Evans
Lophozia ascendens (Warnst.) Schust.
Lophozia elongata Steph.
Lophozia excisa (Dicks.) Dum.
Lophozia guttulata (Linb. et H. Arnell) Evans
Lophozia incisa (Schrad.) Dum.
Lophozia longidens (Lindb.) Evans
Lophozia rutheana (Limpr.) M.A. Howe
Lophozia ventricosa (Dicks.) Dum.

Marchantia polymorpha L.
Mylia anomala (Hook.) S. Gray
Mylia taylorii (Hook.) S. Gray

Fellia neesiana (Gott.) Limpr.
Plagiochila asplenioides (L.) Dum.
Plagiochila porelloides (Torrey *ex* Nees) Lindenb.
Ptilidium californicum (Aust.) Underw.
Ptilidium ciliare (L.) Hampe
Ptilidium pulcherrimum (G. Web.) Hampe
Radula complanata (L.) Dum.
Riccardia chamedryfolia (With.) Grolle
Riccardia multifida (L.) S. Gray
Riccardia palmata (Hedw.) Carruth.
Scapania irrigua (Nees.) Gott. *et al*
Scapania uliginosa (Sw. *ex* Lindenb.) Dum.

(ii) Mosses

Amblystegium juratzkianum Schimp.
Amblystegium serpens (Hedw.) B.S.G.
Andreaea rupestris Hedw.
Atrichum selwynii Aust.
Aulacomnium androgynum (Hedw.) Schwaegr.
Aulacomnium palustre (Hew.) Schwaegr.
Brachythecium albicans (Hedw.) B.S.G.
Brachythecium curtum (Lindb.) Limpr.
Brachythecium erythrorrhizon B.S.G.
Brachythecium frigidum (C. Muell.) Besch.
Brachythecium bolzingeri (Grout) Grout
Brachythecium hylotapetum B. Hig. & N. Hig.
Brachythecium leibergii Grout
Brachythecium reflexum (Starke) B.S.G.
Brachythecium reflexum var. *pacificum* Ren. & Card. *ex* Roell.
Brachythecium rutabulum (Hedw.) B.S.G.
Brachythecium salebrosum (Web. & Mohr) B.S.G.
Brachythecium velutinum (Hedw.) B.S.G.
Bryoerythrophyllum recurvirostrum (Hedw.) Chen
Bryum caespiticium Hedw.
Bryum pseudotriquetrum (Hedw.) Gaertn., Meyer & Scherb.
Bryum weigelii Spreng.
Buxbaumia viridis (D.C.) Moreg & Nestl.
Calliergon cordifolium (Hedw.) Kingb.
Calliergon giganteum (Schimp.) Kindb.
Calliergon stramineum (Brid.) Kindb.
Calliergon trifarium (Web. & Mohr) Kindb.
Campylium chrysophyllum (Brid.) J. Lang
Campylium hallari (Hedw.) Lindb.
Campylium hispidulum (Brid.) Mitt.
Campylium stellatum (Hedw.) C. Jens
Catoscopium nigritum (Hedw.) Brid.
Ceratodon purpureus (Hedw.) Brid.
Cinclidium stygium Sw.
Climacium dendroides (Hedw.) Web. & Mohr.
Crationeuron commutatum (Hedw.) Roth
Crationeuron williamsii Grout
Dicranoweisia crispula (Hedw.) Lindb. *ex* Milde
Dicranum acutifolium (Lindb. & Arn.) C. Jens *ex* Weinn.
Dicranum flagellare Hedw.
Dicranum fuscescens Turn.
Dicranum howellii Ren. & Card.
Dicranum pallidisetum (Bail. *ex* Holz.) Irel.
Dicranum polysetum Sw.
Dicranum scoparium Hedw.
Dicranum spadiceum Zett.
Dicranum tauricum Sapeh.
Distichium capillaceum (Hedw.) B.S.G.
Drepanocladus aduncus (Hedw.) Warnst.
Drepanocladus exannulatus (B.S.G.) Warnst.
Drepanocladus fluitans (Hedw.) Warnst.
Drepanocladus revolvens (Sw.) Warnst.
Drepanocladus sendtneri (Schimp.) Warnst.
Drepanocladus uncinatus (Hedw.) Warnst.
Drepanocladus vernicosus (Lindb. *ex* C. Hartm.) Warnst.
Eurhynchium pulchellum (Hedw.) Jenn.
Fissidens bryoides Hedw.
Funaria hygrometrica Hedw.
Grimmia apocarpa Hedw.
Helodium blandowii (Web. & Mohr) Warnst.
Herzogiella seligeri (Brid.) Iwats.
Herzogiella striatella (Brid.) Iwats.
Hygroamblystegium tenax (Hedw.) Jenn.
Hylocomium pyrenaicum (Spruce) Lindb.
Hylocomium splendens (Hedw.) B.S.G.
Hylocomium umbratum (Hedw.) B.S.G.
Hypnum dieckii Ren. & Card. *ex* Roell.
Hypnum lindbergii Mitt.
Hypnum pratense Koch *ex* Brid.
Hypnum revolutum (Mitt.) Lindb.
Leptobryum pyriforme (Hedw.) Wils.
Meesia triquetra (Richt.) Angstr.
Mnium andrewsianum Steere
Mnium ciliare (C. Muell.) Schimp.
Mnium drummondii Bruch & Schimp.
Mnium glabrescens Kindb.
Mnium insigne Mitt.
Mnium marginatum (With.) Brid. *ex* P.-Beauv.
Mnium medium B.S.G.
Mnium rudum Williams *ex* Britt. & Williams
Mnium pseudopunctatum Bruch & Schimp.
Mnium punctatum Hedw.
Mnium punctatum Hedw. var. *elatum* Schimp.
Mnium rugicum Laur.
Mnium spinulosum B.S.G.
Mnium venustum Mitt.
Myrinia pulvinata (Wahlenb.) Schimp.
Orthotrichum obtusifolium Brid.
Paludella squarrosa (Hedw.) Brid.
Philonotis fontana (Hedw.) Brid.
Plagiothecium denticulatum (Hedw.) B.S.G.

Plagiothecium laetum B.S.G.
Plagiothecium latebricola B.S.G.
Pleurozium schreberi (Brid.) Mitt.
Pogonatum alpinum (Hedw.) Roehl.
Poblia cruda (Hedw.) Lindb.
Poblia nutans (Hedw.) Lindb.
Poblia sphagnicola (B.S.G.) Lindb. & Arnell
Poblia wahlenbergii (Web. & Mohr) Andr.
Polytrichum commune Hedw.
Polytrichum formosum Hedw.
Polytrichum juniperinum Hedw.
Polytrichum piliferum Hedw.
Polytrichum strictum Brid.
Pterigynandrum filiforme Hedw.
Ptilium crista-castrensis (Hedw.) DeNot.
Pylaisiella polyantha (Hedw.) Grout

Rhacomitrium canescens (Hedw.) Brid.
Rhacomitrium heterostichum (Hedw.) Brid.
Rhacomitrium lanuginosum (Hedw.) Brid.
Rhynchostegium serrulatum (Hedw.) Jaeg. & Sauerb.
Rhytidiadelphus loreus (Hedw.) Warnst.
Rhytidiadelphus triquetrus (Hedw.) Warnst.
Rhytidiopsis robusta (Hedw.) Broth.
Rhytidium rugosum (Hedw.) Kindb.
Roellia roellii (Brith. *ex* Roell) Andr. *ex* Crum

Scorpidium scorpioides (Hedw.) Limpr.
Sphagnum capillaceum (Weiss) Schrank
Sphagnum capillaceum (Weiss) Schrank var. *tenellum* (Schimp.) Andr.
Sphagnum fuscum (Schimp.) Klingrr.
Sphagnum girgensohnii Russ.
Sphagnum recurvum P.-Beauv. var. *recurvum*
Sphagnum recurvum P.-Beauv. var. *tenue* Klinggr.
Sphagnum squarrosum Crome
Sphagnum subnitens Russ. & Warnst. *ex* Warnst.
Sphagnum subsecundum Nees *ex* Sturm.
Sphagnum teres (Schimp.) Angstr. *ex* C. Hartm.
Splachnum sphæricum Hedw.
Stohesiella prælonga (Hedw.) Robins.

Tetraphis geniculata Girg. *ex* Milde
Tetraphis pellucida Hedw.
Tetraplodon angustatus (Hedw.) B.S.G.
Tetraplodon mnioides (Hedw.) B.S.G.
Thuidium abietinum (Hedw.) Loeske
Thuidium recognitum (Hedw.) Lindb.
Timmia austriaca Hedw.
Tomenthypnum nitens (Hedw.) Loeske
Tortula ruralis (Hedw.) Gaertn., Meyer & Scherb.

Annas, R.M. and R. Coupé (eds.) 1979. Biogeoclimatic zones and subzones of the Cariboo Forest Region. British Columbia Ministry of Forests, Victoria, B.C. 103p.

Argus, G.W. 1973. The genus *Salix* in Alaska and the Yukon. Nat. Mus. Natural Sci. Publ. Bot. No. 2. Nat. Museums of Canada, Ottawa. 279p.

Brayshaw, T.C. 1976. Catkin Bearing Plants of British Columbia. British Columbia Provincial Museum. Occasional Paper Series No. 18. 176p.

British Columbia Forest Service. 1977. Tree Book. Ministry of Forests, Forest Service Information Division. Victoria, B.C. 99p.

Clark, L.J. (John G. Trelawny ed.). 1976. Wild Flowers of the Pacific Northwest. Gray's Publishing Ltd., Sidney, British Columbia. 604p.

Conard, H.S. and P.L. Redfern. 1979. How to know the mosses and liverworts. Wm. C. Brown, Dubuque, Iowa. 302p.

Crum, H. 1973. Mosses of the Great Lakes forest. Contr. Univ. Mich. Herb. 10:1-404.

Crum, A.H., W.C. Steere, and L.E. Anderson. 1973. A new list of mosses of North America north of Mexico. The Bryologist 76:83-130.

Daubenmire, R. 1974. Taxonomic and ecological relationships between *Picea glauca* and *Picea engelmanii*. Can. J. Bot. 52:1545-1560.

Garman, E.H. 1957. The occurrence of spruce in the interior of British Columbia. B.C. Forest Service Tech. Publ. T49.

Garman, E.H. 1973. Guide to the trees and shrubs of British Columbia. British Columbia Provincial Museum Handbook No. 31. Victoria. 131p.

Hale, M.E. 1979. How to know the lichens. Wm. C. Brown, Dubuque, Iowa. 246p.

Hale, M.E., Jr. and W.L. Culberson. 1970. A second checklist of the lichens of the continental United States and Canada. The Bryologist 63:137-172.

Hitchcock, C.L., A. Cronquist, M. Ownbey and J.W. Thompson. 1955-69. Vascular plants of the Pacific Northwest. Parts 1-5. University of Washington Press, Seattle.

Hitchcock, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press, Seattle. 730p.

Hosie, R.C. 1969. Native trees of Canada. Queens Printer, Ottawa. 380p.

Hubbard, W.A. 1969. The Grasses of British Columbia. British Columbia Provincial Museum Handbook No. 9. Victoria, 205p.

Hultén, E. 1968. Flora of Alaska and Neighbouring Territories. Stanford University Press, Stanford, California. 1008p.

Krajina, V.J. 1965. Biogeoclimatic zones and classification of British Columbia. Ecol. of Western North America 1:1-17.

Lyons, C.P. 1974 (1st ed. 1952). Trees, shrubs and flowers to know in British Columbia. J.M. Dent and Sons, Toronto and Vancouver. 194p.

Moss, E.H. 1959. Flora of Alberta. University of Toronto Press, Toronto. 546p.

Revel, R. 1972. Phytogeocoenoses of the Sub-boreal Spruce Biogeoclimatic Zone in North Central British Columbia. Ph.D. thesis, University of British Columbia. 408p.

Roche, L. 1969. A genecological study of the genus *Picea* in British Columbia. New Phytol. 68:505-554.

Rowe, J.S. 1972. Forest Regions of Canada. Department of the Environment, Canadian Forest Service Publication No. 1300. Ottawa. 172p.

Schofield, W.H. 1968. Some Mosses of British Columbia. British Columbia Provincial Museum Handbook No. 28. Victoria. 262p.

Scoggan, H.J. 1978-1979. The Flora of Canada. Parts 1-14. National Museum of Canada, Ottawa.

Stotler, R. and B. Crandall-Stotler. A checklist of the Liverworts and Hornworts of North America. The Bryologist 80:405-428.

Szczawinski, A.F. 1959. The Orchids (Orchidaceæ) of British Columbia. British Columbia Provincial Museum Handbook No. 16. Victoria. 124p.

Szczawinski, A.F. 1962. The Heather Family (Ericaceæ) of British Columbia. British Columbia Provincial Museum Handbook No. 19. Victoria. 205p.

Taylor, T.M.C. 1973. The Ferns and Fern Allies of British Columbia. British Columbia Provincial Museum Handbook No. 12. Victoria. 172p.

Taylor, T.M.C. 1966. The Lily Family (Liliaceæ) of British Columbia. British Columbia Provincial Museum Handbook No. 25. Victoria. 109p.

Taylor, T.M.C. 1973. The Rose Family (Rosaceæ) of British Columbia. British Columbia Provincial Museum Handbook No. 30. Victoria. 223p.

Taylor, T.M.C. 1974. The Pea Family (Leguminosæ) of British Columbia. British Columbia Provincial Museum Handbook No. 32. Victoria. 251p.

Taylor, T.M.C. 1974. The Figwort (Scrophulariaceæ) Family of British Columbia. British Columbia Provincial Museum Handbook No. 33. Victoria. 237p.

Taylor, R.L. and B. MacBryde. 1977. Vascular Plants of British Columbia. The University of British Columbia Press, Vancouver, B.C. 754p.

Taylor, R.L. and B. MacBryde. 1978. New taxa and nomenclatural changes with respect to *Vascular Plants of British Columbia: A Descriptive Resource Inventory.* Can. J. Bot. 56:184-195.

Viereck, L.A. and E.L. Little. 1972. Alaska trees and shrubs. U.S.D.A. For. Serv., Agric. Handb. No. 410. 265p.

Wali, M.K. and V.J. Krajina. 1973. Vegetation — environment relationships of some Sub-boreal Spruce Zone ecosystems in British Columbia. Vegetatio 26, 4-6:237-381.

Welsh, S.L. 1974. Anderson's Flora of Alaska and adjacent parts of Canada. Brigham Young University Press. Provo, Utah. 724p.

Index of Scientific and Common Names

Abies lasiocarpa 3
Aconitum delphiniifolium 78
Actæa rubra 19, 79
Agropyron trachycaulum 39, 54
alder, green 65
alder, Sitka 7, 65
alder, speckled 7, 65
Alnus incana 7, 65
Alnus viridis subsp. *fruticosa* 65
Alnus viridis subsp. *sinuata* 7, 65
alumroot, smooth 82
Amelanchier alnifolia 7, 66
Antennaria microphylla 19
Apocynum androsæmifolium 19
Aquilegia formosa 79
Aralia nudicaulis 20
Arctostaphylos uva-ursi 16, 73
Arnica cordifolia 20, 80
arnica, heartleaved 20, 80
Aruncus dioicus 21, 79
aspen, trembling 3
Aster ciliolatus 21, 80
Aster conspicuus 21, 80
Aster modestus 80
aster, fringed 21, 80
aster, great northern 80
aster, showy 21, 80
Athyrium filix-femina 22, 75
Aulacomnium palustre 58
azalea, rusty false 10

baneberry 19, 79
Barbilophozia lycopodioides 58
bearberry 16, 73
bedstraw, creeping sweet 25
bedstraw, northern 25
Betula glandulosa 3, 8
Betula papyrifera 3
birch, paper 3
birch, scrub 3, 8
bluebead 22
bluebells, northern 80
blueberry, dwarf 18, 72
blueberry, oval-leaved 15, 72
blueberry, velvet-leaved 15, 72
bluejoint 41, 54
bogbean 29
bog-laurel 9
Botrychium virginianum 75
Brachythecium hylotapetum 59, 85
bracken 75
bramble, five-leaved 17, 76
brome, common 40, 54
Bromus vulgaris 40, 54
buckbean 29
bunchberry 23
buttercup, meadow 78

Calamagrostis canadensis 41, 54
Calamagrostis rubescens 42, 54
Carex aquatilis 36
Carex disperma 36
Carex praticola 37
Carex rossii 37
Carex rostrata 38
cherry, bitter 66
cherry, choke 66
cherry, pin 66
Chimaphila umbellata 16, 73
Cinna latifolia 43, 54
Circæa alpina 22
Cladina alpestris 84
Cladina arbuscula 84
Cladina mitis 55, 84
Cladina rangiferina 55, 84
Cladonia chlorophæa 55
Cladonia gracilis 56
Cladona uncialis 84
Clintonia uniflora 22
cloudberry 76
club-moss, stiff 28
colt's-foot, palmate 32
columbine, orange 79
Cornus canadensis 23
Cornus sericea 8, 67
Corylus cornuta 65
cotton-grass, Chamisso's 38
cottonwood, black 3
cow-parsnip 27
cow-wheat 29
cranberry, bog 73
creeping-snowberry 17, 73
crowberry 16
currant, northern black 68
currant, red swamp 68
currant, skunk 68

Delphinium glaucum 78
devil's club 10
Dicranum fuscescens 59
Dicranum polysetum 59
Disporum hookeri 81
Disporum trachycarpum 81
dogbane, spreading 19
dogwood, red-osier 8, 67
Douglas-fir 3
Drepanocladus uncinatus 60
Dryopteris assimilis 23, 75

elderberry, red 12, 69
Elymus glaucus 44, 54
Empetrum nigrum 16
enchanter's nightshade 22
Epilobium angustifolium 23, 80
Equisetum arvense 24, 74
Equisetum fluviatile 74
Equisetum pratense 24, 74
Equisetum scirpoides 74
Equisetum sylvaticum 24, 74
Equisetum variegatum 74
Eriophorum chamissonis 38

fairybells, rough-fruited 81
fairybells, smooth-fruited 81
false box 10, 73
fern, beech 75
fern, cowboy 75
fern, lady 22, 75
fern, oak 26, 75
fern, ostrich 29, 75
fern, rattlesnake 75
fern, spiny wood 23, 75
fescue, Rocky Mountain 46, 54
fescue, western 45, 54
Festuca occidentalis 45, 54
Festuca saximontana 46, 54
fir, subalpine 3
fireweed 23, 80
foamflower, one-leaved 82
foamflower, three-leaved 33, 82
Fragaria virginiana 76

Galium boreale 25
Galium triflorum 25
Gaultheria hispidula 17, 73
Geocaulon lividum 25
Geranium erianthum 78
Geranium richardsonii 78
geranium, purple 78
geranium, white 78
goat's beard 21, 79
Goodyera oblongifolia 26, 77
Goodyera repens 77
gooseberry, black 11, 68
gooseberry, cream-flowered 68
grass, Canada reed 41, 54
grass, June 47, 54
grass, Kentucky blue 50, 54
grass, pine 42, 54
grass, rough-leaved rice 48, 54
grass, short-awned rice 49, 54
grass, slender wheat 39, 54
grass, spreading needle 53, 54
grass, stiff needle 52, 54
Gymnocarpium dryopteris 26, 75

hazelnut, beaked 65
Heracleum sphondylium 27
Heuchera chlorantha 82
highbush-cranberry 15
horsetail, common 24, 74
horsetail, meadow 24, 74
horsetail, swamp 74
horsetail, wood 24, 74
huckleberry, black 14, 72
Hylocomium splendens 60, 85

juniper, common 8
Juniperus communis 8

Kalmia microphylla subsp. *occidentalis* 9
kinnikinnick 16, 73
knight's plume 62, 85
Koeleria macrantha 47, 54

Larix laricina 3
larkspur, tall 78
Lathyrus neadensis 26, 83
Lathyrus ochroleucus 27, 83
Ledum groenlandicum 9
lichen, dog 57
lichen, pixie-cup 55
lichen, reindeer 55, 84
lily-of-the-valley, false 28
lingonberry 18, 73
Linnæa borealis 17, 73
Listera cordata 28
Lonicera involucrata 9, 67
Lycopodium annotinum 28

Maianthemum canadense 28
Marchantia polymorpha 58
Matteucia struthiopteris 29, 75
meadow-rue, western 33, 79
Melampyrum lineare 29
melic, false 51, 54
Menyanthes trifoliata 29
Menziesia ferruginea 10
Mertensia paniculata 80
Mitella nuda 82
Mitella pentandra 82
mitrewort, creeping 82
mitrewort, five-stamened 82
Mnium glabrescens 60
Mnium medium 61
Mnium spinulosum 61
Moneses uniflora 77
Monkshood, mountain 78
moss, common hair cap 62
moss, common red peat 63
moss, electrified cat's tail 62
moss, knight's plume feather 62, 85
moss, pipecleaner 63
moss, red-stemmed feather 61, 85
moss, step 60, 85
moss, stepped feather 60, 85
mountain-ash, Sitka 69
mountain-ash, western 69

nagoonberry, dwarf 76
Nephroma arcticum 56
nettle, stinging 34

Oplopanax horridus 10
orchid, rattlesnake 26, 77
orchid, small rattlesnake 77
Orthilia secunda 30, 77
Oryzopsis asperifolia 48, 54
Oryzopsis pungens 49, 54
Osmorhiza chilensis 30, 79

Paxistima myrsinites 10, 73
peavine, creamy 27, 83
peavine, purple 26, 83
Peltigera aphthosa 56
Peltigera canina 57
Peltigera malacea 57

Petasites palmatus 32
Picea engelmannii x *P. glauca* 3
Picea glauca 3
Picea mariana 3
pine, lodgepole 3
Pinus contoria 3
pipsissewa 16, 73
plantain, rattlesnake 26, 77
Pleurozium schreberi 61, 85
Poa pratensis 50, 54
Polytrichum commune 62
Populus balsamifera subsp. *trichocarpa* 3
Populus tremuloides 3
prince's pine 16, 73
Prunus emarginata 66
Prunus pensylvanica 66
Prunus virginiana 66
Pseudotsuga menziesii 3
Pteridium aquilinum 75
Ptilium crista-castrensis 62, 85
pussytoes, rosy 19
Pyrola asarifolia 31, 77
Pyrola chlorantha 31, 77
Pyrola minor 77

queen's cup 22

Ranunculus acris 78
raspberry 11
raspberry, trailing 18, 76
Rhytidiadelphus triquetrus 62
Rhytidiopsis robusta 63
Ribes glanduloum 68
Ribes hudsonianum 68
Ribes lacustre 11, 68
Ribes oxyacanthoides 68
Ribes triste 68
Rosa acicularis 11, 69
rose, prickly 11, 69
Rubus arcticus 76
Rubus chamæmorus 76
Rubus idæus 11
Rubus parviflorus 12
Rubus pedatus 17, 76
Rubus pubescens 18, 76
rye, blue wild 44, 54

Salix barclayi 70
Salix bebbiana 12, 70
Salix drummondiana 70
Salix glauca 70
Salix scouleriana 70
Sambucus racemosa 12, 69
sarsaparilla, false 20
Saskatoon 66
Schizachne purpurascens 51, 54
scouring-rush, dwarf 74
scouring-rush, northern 74
sedge, beaked 38
sedge, meadow 37
sedge, Ross' 37
sedge, soft-leaved 36
sedge, water 36
Shepherdia canadensis 13
single delight 77
Smilacina racemosa 32, 81
Smilacina stellata 81
snowberry 14, 66
Solomon's-seal, false 32, 81
Solomon's-seal, star-flowered false 81
soopolallie 13
Sorbus scopulina 69
Sorbus sitchensis 69
spaghetti flower 79
Sphagnum capillaceum 63
sphagnum, common red 63
Spiræa betulifolia 13, 71
Spiræa douglasii subsp. *menziesii* 13, 71
Spiræa pyramidata 14, 71
spirea, birch-leaved 13, 71
spirea, pink 13, 71
spirea, pyramid 14, 71
spruce, black 3
spruce, hybrid 3
spruce, white 3
Stereocaulon tomentosum 57
Stipa occidentalis 52, 54
Stipa richardsonii 53, 54
strawberry, wild 76
Streptopus amplexifolius 32, 81
Streptopus roseus 32, 81
sugar scoops 33, 82
sweetcicely 30, 81
Symphoricarpos albus 14, 66

tamarack 3
tea, Labrador 9
Thalictrum occidentale 33, 79
Thelypteris phegopteris 75
thimbleberry 12
Thuidium abietinum 63
Tiarella trifoliata 33, 82
Tiarella unifoliata 82
Timmia austriaca 64
toadflax, bastard 25
Tomenthypnum nitens 64
Tortula ruralis 64
twayblade, heart-leaved 28
twinberry, black 9, 67
twinflower 17, 73
twistedstalk, clasping-leaved 32, 81
twistedstalk, rosy 32, 81

Urtica dioica 34

Vaccinium cæspitosum 18, 72
Vaccinium membranaceum 14, 72
Vaccinium myrtilloides 15, 72
Vaccinium ovalifolium 15, 72
Vaccinium oxycoccos 73
Vaccinium vitis-idæa 18, 73
vetch, American 34, 83
Viburnum edule 15
Vicia americana 34, 83

Viola canadensis 35
Viola glabella 35
violet, Canada 35
violet, yellow stream 35
willow, Barclay's 70
willow, Bebb's 12, 70
willow, Drummond's 70
willow, gray-leaved 70
willow, Scouler's 70
wintergreen, green 31, 77
wintergreen, lesser 77
wintergreen, one-flowered 77
wintergreen, one-sided 30, 77
wintergreen, rosy 31, 77
wood-reed, nodding 43, 54

POOR

QUALITY

ORIGINAL